



# Service Manual

ORDER NO.  
**RRV1 377**

FM/AM DIGITAL SYNTHESIZER TUNER

# F-C5RDS

FM/AM TUNER

# F-C3

- Refer to the service manual **RRV1108** for F-C5RDS/HE and **RRV1049** for F-C3/HE.

**THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).**

Type	Model		Power Requirement	The voltage can be converted by the following method.
	F-C5RDS	F-C3		
HE8	O	O	AC220-230V	AC240V, *
HEWZ18	O	O	AC220-230V	AC240V, *

\* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

**PIONEER ELECTRONIC CORPORATION**

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## 1. CONTRAST OF MISCELLANEOUS PARTS

**NOTES:**

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 $\Omega$	$\rightarrow$	$56 \times 10^3$	$\rightarrow$	561 .....	RDI/8PM 5 6 1 J
47k $\Omega$	$\rightarrow$	$47 \times 10^3$	$\rightarrow$	473 .....	RDI/4PS 4 7 3 J
0.5 $\Omega$	$\rightarrow$	0R5 .....			RN2H 0 R 5 K
1 $\Omega$	$\rightarrow$	010 .....			RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k $\Omega$	$\rightarrow$	$562 \times 10^3$	$\rightarrow$	5621 .....	RNI/4PC 5 6 2 1 F
----------------	---------------	-------------------	---------------	------------	-------------------

### 1. CONTRAST OF F-C5RDS/HE8 AND F-C5RDS/HE

F-C5RDS/HE8 and F-C5RDS/HE have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		F-C5RDS/HE	F-C5RDS/HE8	
$\Delta$	Tuner assy	AWE7007	AWE7006*	
	Tuner assy	AWZ7272	AWZ7271*	
	Power assy	AWZ7275	AWZ7274*	
	Rear panel	ANC7095	ANC7297	
	Ferrite core	Not used	ATX7001*	
NSP	Screw	Not used	ABA1047*	
	Plate (GND)	Not used	ANK1120*	
	FM antenna	ADH1005	ADH1002	

Note : Parts marked \* are the same as those of F-C5RDS/HEWZI which is shown with F-C5RDS in the service manual RRV1108.

### 2. CONTRAST OF F-C5RDS/HEWZI8 AND F-C5RDS/HEWZI

Although F-C5RDS/HEWZI8 and F-C5RDS/HEWZI are different in model name, they consist of the same components.

**P.S**

F-C5RDS/HEWZI8 is made a design change like the following:

Mark	Description	OLD	NEW
$\Delta$	Ferrite core	ATX7001	Not used
	Ferrite core	Not used	ATX7001

Power assy (AWZ7274) is made a design change like the following:

Mark	Description	OLD	NEW
$\Delta$	C601	ACG1002 (0.01 $\mu$ F/400V)	ACG7020 (0.01 $\mu$ F/250V)

Tuner assy (AWZ7271) is made a design change like the following:

Mark	Description	OLD	NEW
$\Delta$	C559	CKDYB102K50	Not used
	C559	Not used	CKDYB102K50

### 3. CONTRAST OF F-C3/HE8 AND F-C3/HE

F-C3/HE8 and F-C3/HE have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		F-C3/HE	F-C3/HE8	
NSP	Tuner assy	AWE7002	AWE7019	
	Main assy	AWZ7048	AWZ8214*	
	Rear panel	ANC7058	ANC7296	
	Screw	Not used	ABA1047	
	Spacer	AEC1236	Not used	
	FM antenna	ADH1005	ADH1002	

Note \* :Refer to 2. PCB PARTS LIST and 3. SCHEMATIC AND PCB DIAGRAMS.

### 4. CONTRAST OF F-C3/HEWZI8 AND F-C3/HEWZI

F-C3/HEWZI8 and F-C3/HEWZI have the same construction except for the following:

Mark	Symbol & Description	F-C3/HEWZI	F-C3/HEWZI8
△	Fuse (FU2, T2A/250V)	Not used	AEK - 511*

Note \* :Refer to 3. SCHEMATIC AND PCB DIAGRAMS.

### P.S

Main assy (AWZ7049) is made a design change like the following:

Mark	Description	OLD	NEW
△	C309	ACG1002 (0.01μF/400V)	ACG7020 (0.01μF/250V)
	L301	ATF 1135	Not used
△	L301	Not used	ATF1135
	C1	CKDYX103M25	Not used
△	C1	Not used	CKDYX103M25

## 2. PCB PARTS LIST

### NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The △ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω → 56 × 10<sup>1</sup> → 561 ..... RD1/8PM 5|6|7|J

47kΩ → 47 × 10<sup>3</sup> → 473 ..... RD1/4PS 4|7|3|J

0.5Ω → 0R5 ..... RN2H 0|R|5|K

1Ω → 010 ..... RS1P 0|1|0|K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ → 562 × 10<sup>3</sup> → 5621 ..... RNI/4PC 5|6|2|1|F

Mark No. Description	Parts No.	Mark No. Description	Parts No.
<b>MAIN ASSY (AWZ8214)</b>			
<b>SEMICONDUCTORS</b>			
IC103			
IC102	AN7470P	Q305, Q401	2SC1740S
IC101	LA1265S	Q111	2SC1740SLN
IC301	LM7001J	Q101, Q102	2SC2668
Q301	NJM7812AS	Q304	2SD438
Q103, Q112 – Q115, Q117 – Q119	2SA1529	Q110	2SK246
	2SC1740S		
		Q104, Q106, Q108	XDA124ES
		Q116, Q302	XDA143ES
		Q105, Q107, Q109, Q122, Q303	XDC143ES
		Q306	XDC143ES

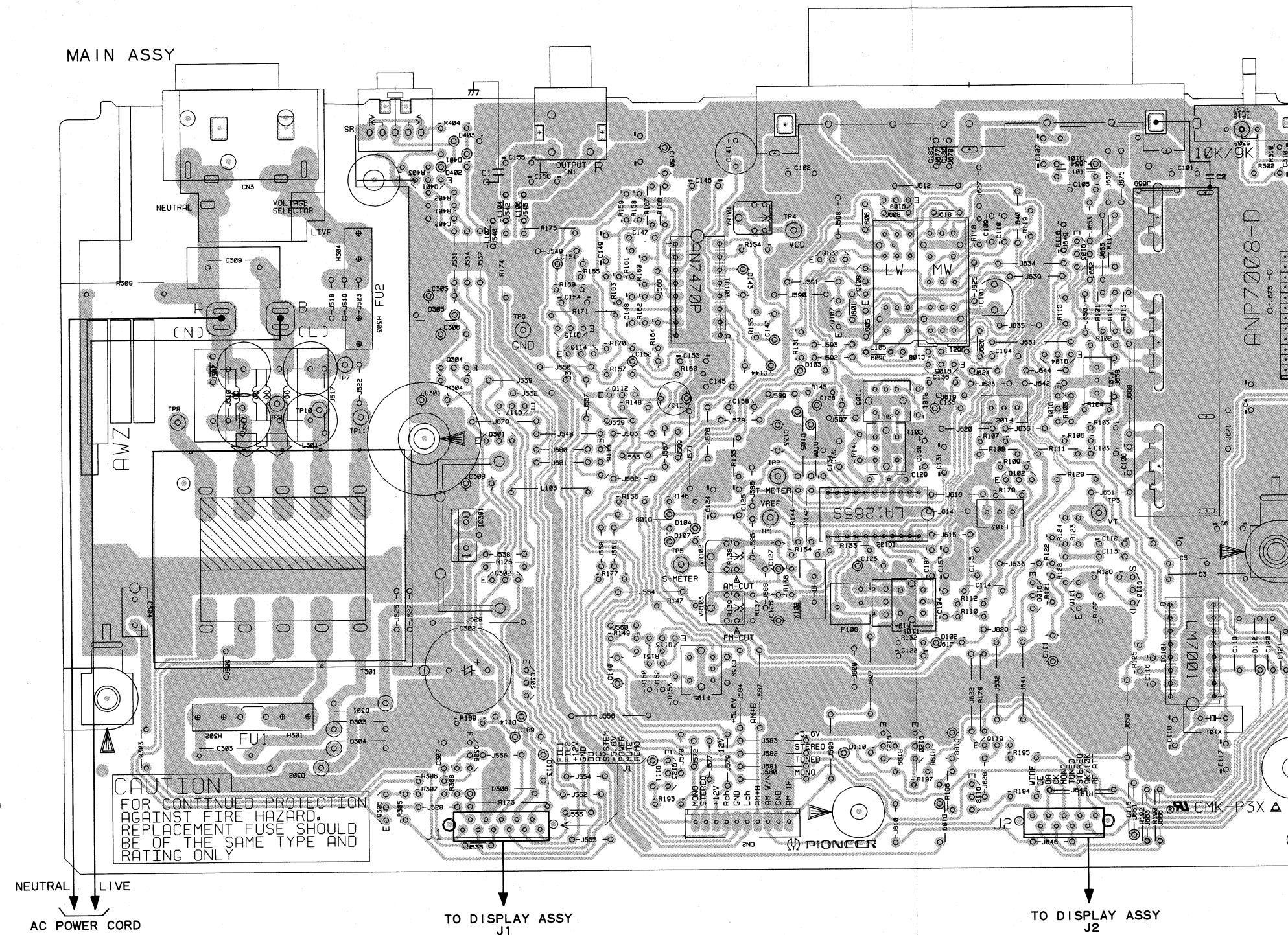
Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
D102 – D108, D113, D114, D306		1SS252	C103, C104, C106, C113, C114	CKPUYY103M16	
D401, D402		1SS252	C116, C129, C136, C145	CKPUYY103M16	
D101		1SV156	C148, C149	CQMA102J50	
D112, D305, D403		RD6.2ESB	C141	CQPA471J100	
D301 – D304		S5566			
<b>COILS AND FILTERS</b>					
L102		ATE – 079	R117		RD1/2PM681J
F103		ATF – 107	VR101	(4.7kΩ)	ACP1042
F101, F102		ATF – 119	VR102	(10kΩ)	ACP1043
F104		ATF – 208	VR103	(22kΩ)	ACP1044
F105		ATF1088		Other Resistors	RD1/8PM □□□J
△ L301	(180μH, AC250V)	ATF1135			
L101		LAU2R2J			
L103, L104, L106		LAU2R2K			
L107		LAU330J			
<b>TRANSFORMERS</b>					
△ T301	(6.5VA)	ATT1226			
<b>CAPACITORS</b>					
△ C303	(0.047μF, 25V)	ACG – 009	X101	SCREW	ABA1012
C309	(10000PF, AC250V)	ACG7020		ANTENNA TERMINAL 2 – P	AKA1012
C304		ACH1246	CN1	PIN JACK(2P)	AKB1146
C109, C117, C118		CCDCH150J50	CN8220	JACK	AKN – 209
C187		CCPUSL270J50	CN3	AC SOCKET 1 – P	AKP1034
C115		CCPUSL470J50			
C138		CEANP4R7M50			
C133		CEAS010M50			
C127		CEAS100M50			
C128, C137, C301		CEAS101M16			
C143		CEAS1R5M50			
C189		CEAS220M25			
C302		CEAS222M35			
C126, C151, C152		CEAS2R2M50			
C111		CEAS330M16			
C142		CEAS3R3M50			
C135, C150, C305, C306		CEAS470M10			
C123, C140		CEAS4R7M50			
C144		CEASR22M50			
C308		CEHAQ330M16			
C112		CFTXA224J50			
C105, C107		CKDYB103K50			
C139		CKDYB122K50			
C124		CKDYB222K50			
C155, C156		CKDYB332K50			
C132		CKDYF103Z50			
C122, C130, C131, C4		CKDYF223Z50			
△ C1		CKDYX103M25			
C110, C125, C146		CKDYX473M25			
C185, C307, C402		CKPUYB101K50			
C101, C102, C186		CKPUYB102K50			
C147		CKPUYB121K50			
C134		CKPUYB331K50			
C184		CKPUYF223Z25			
C108		CKPUYF473Z16			

Note: 4 serial F.E. module assy has no servise part.

### 3. SCHEMATIC AND PCB DIAGRAMS

● This diagram is viewed from the mounted parts side.

A



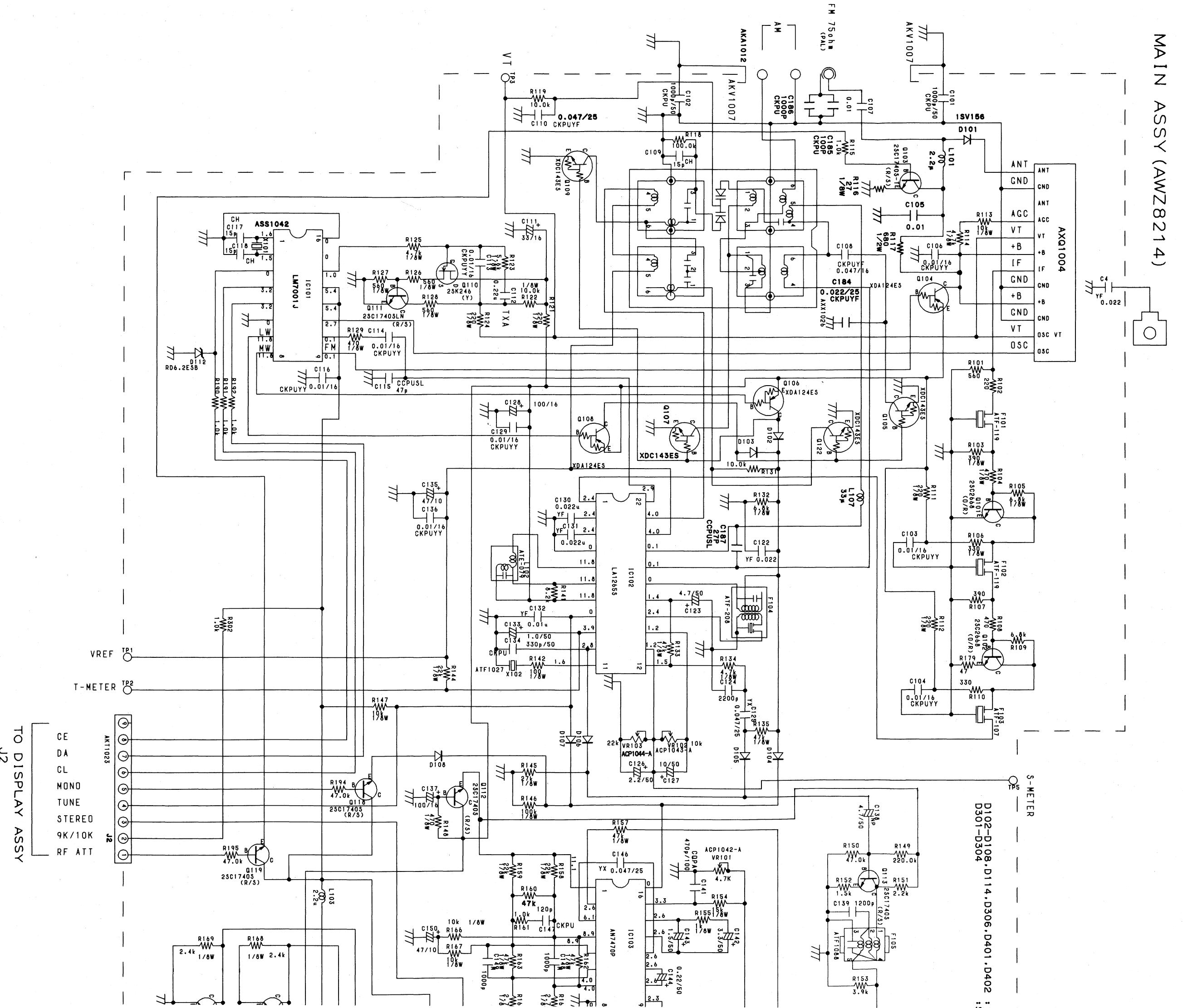
#### NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
Q504		Transistor
Q504		Diode
C513		Capacitor (Polarized)

3. The transistor terminal marked with E or C shows the emitter.
4. The diode terminal marked with C or D shows cathode side.
5. The capacitor terminal marked with C or N shows negative terminal.
6. The parts mounted on each PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

MAIN ASSY (AWZ8214)



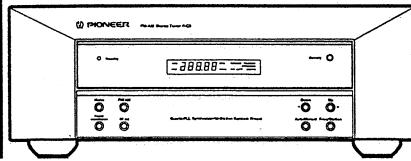


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# Service Manual



ORDER NO.  
**RRV1049**

## FM/AM TUNER **F-C3**

**THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).**

Type	Model	Power Requirement	The voltage can be converted by the following method.
			F-C3
KU	○	AC120V	—
HE	○	AC220-230V	AC240V, *
HB	○	AC240V	AC220-230V, *
HEWZI	○	AC220-230V	AC240V, *

\* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

- For HEWZI and HB types, refer to page 25.

## CONTENTS

1. SAFETY INFORMATION .....	2
2. EXPLODED VIEWS, PACKING AND PARTS LIST .....	3
3. SCHEMATIC AND PCB CONNECTION DIAGRAMS .....	6
4. PCB PARTS LIST .....	21
5. ADJUSTMENTS .....	23
6. FOR HEWZI AND HB TYPES .....	25
7. SPECIFICATIONS .....	27
8. PANEL FACILITIES .....	28

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# 1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

## WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

## NOTICE

### (FOR CANADIAN MODEL ONLY)

Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

## REMARQUE

### (POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

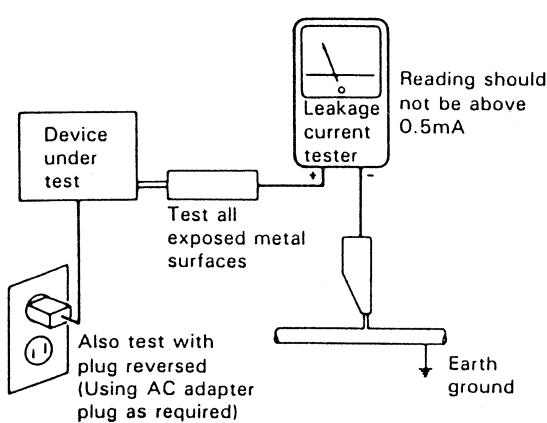
### (FOR USA MODEL ONLY)

## 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

### LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed, metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

## 2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a  $\Delta$  on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

A

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## 2. EXPLODED VIEWS, PACKING AND PARTS LIST

• Exploded View

C

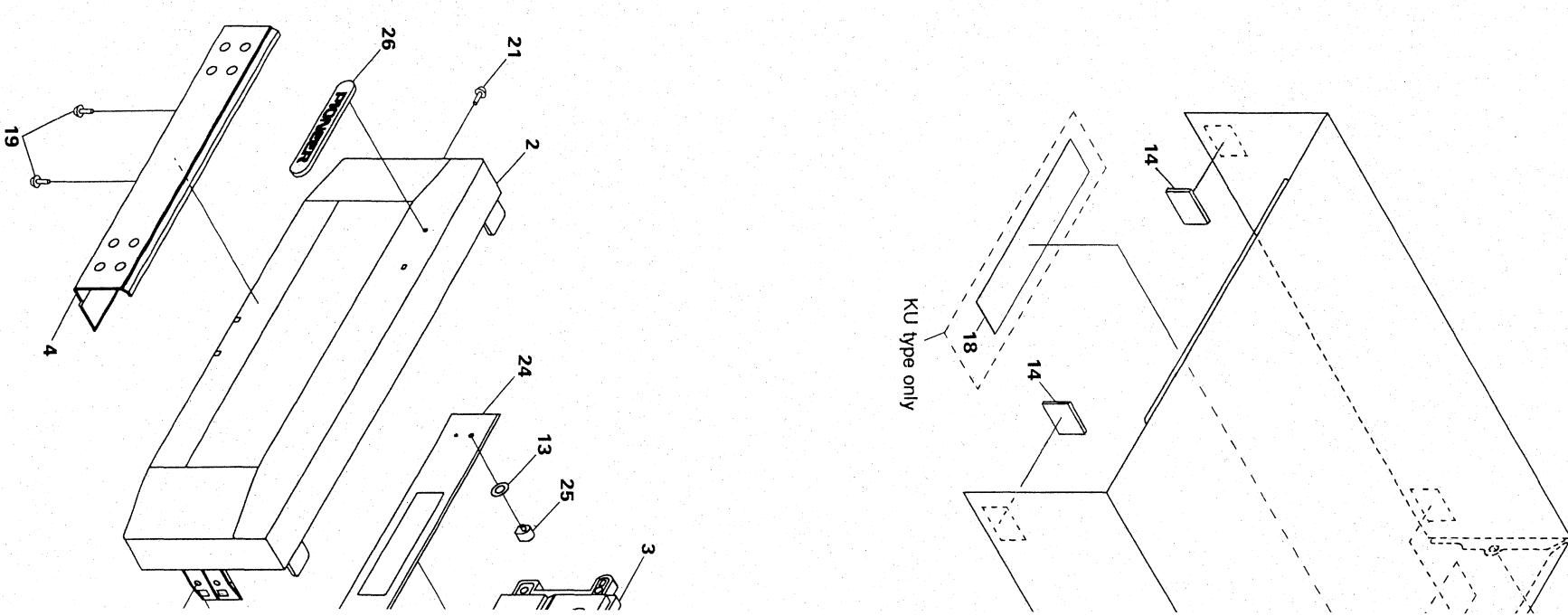
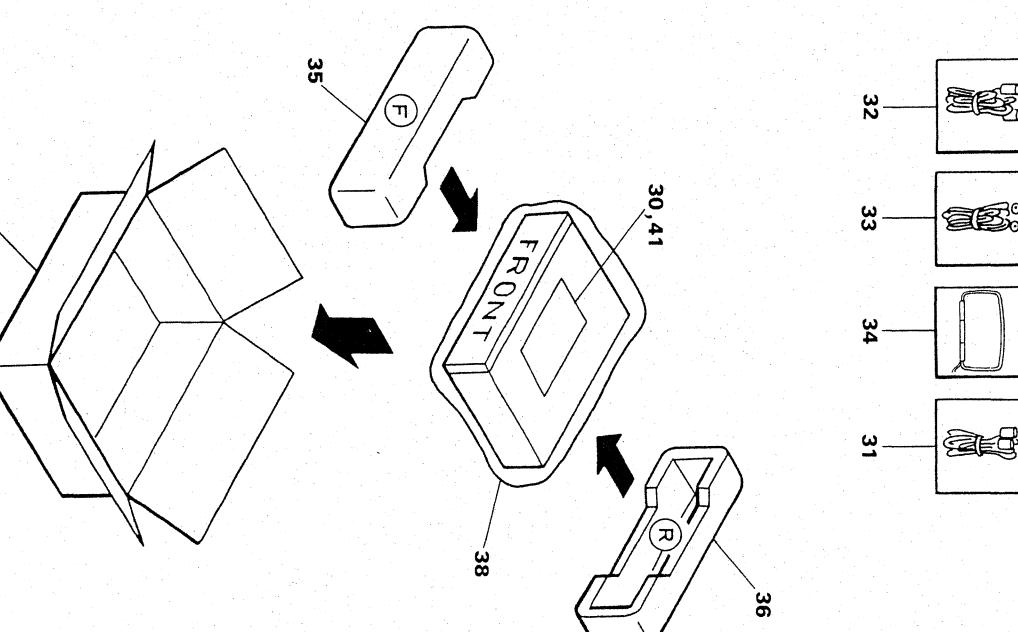
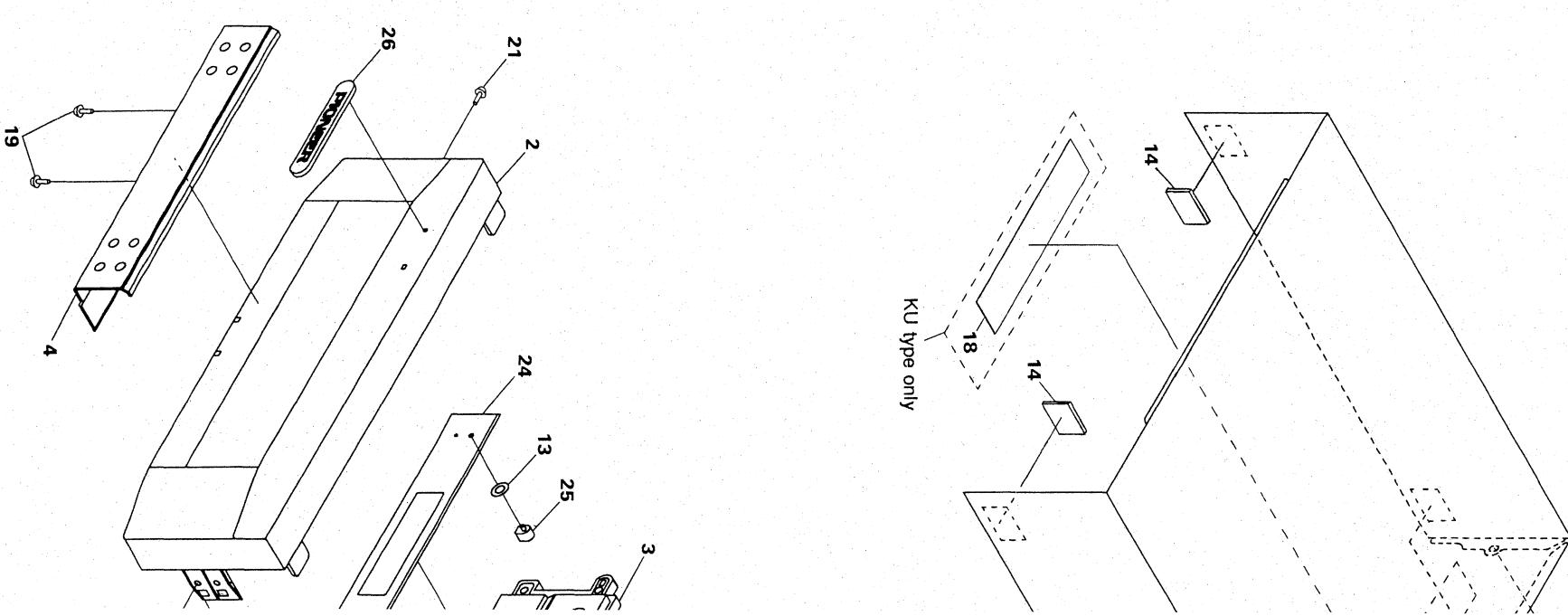
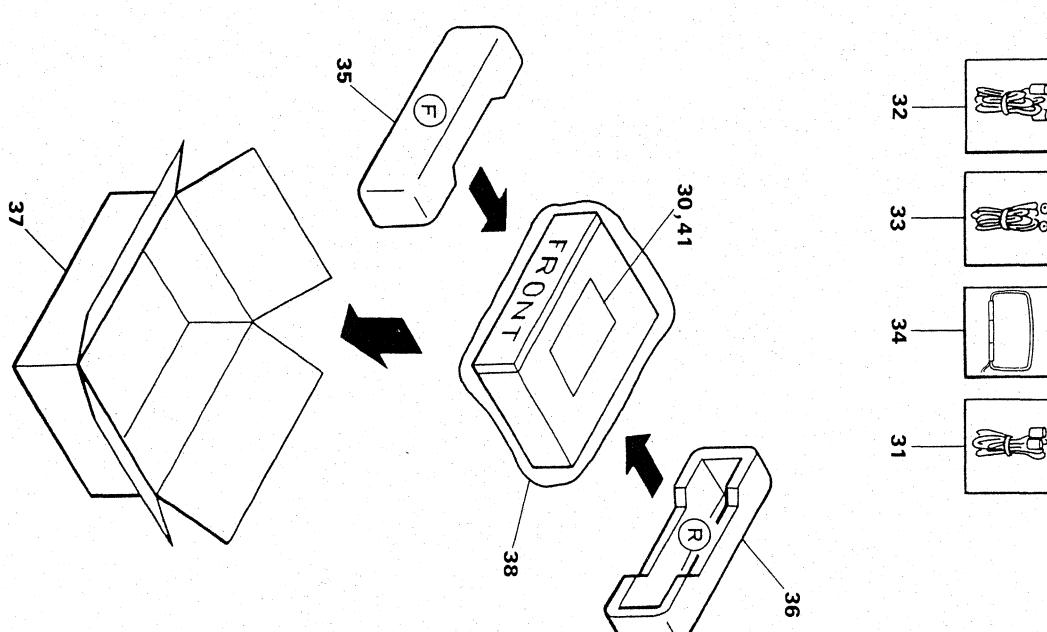
NOTES:  
 • Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

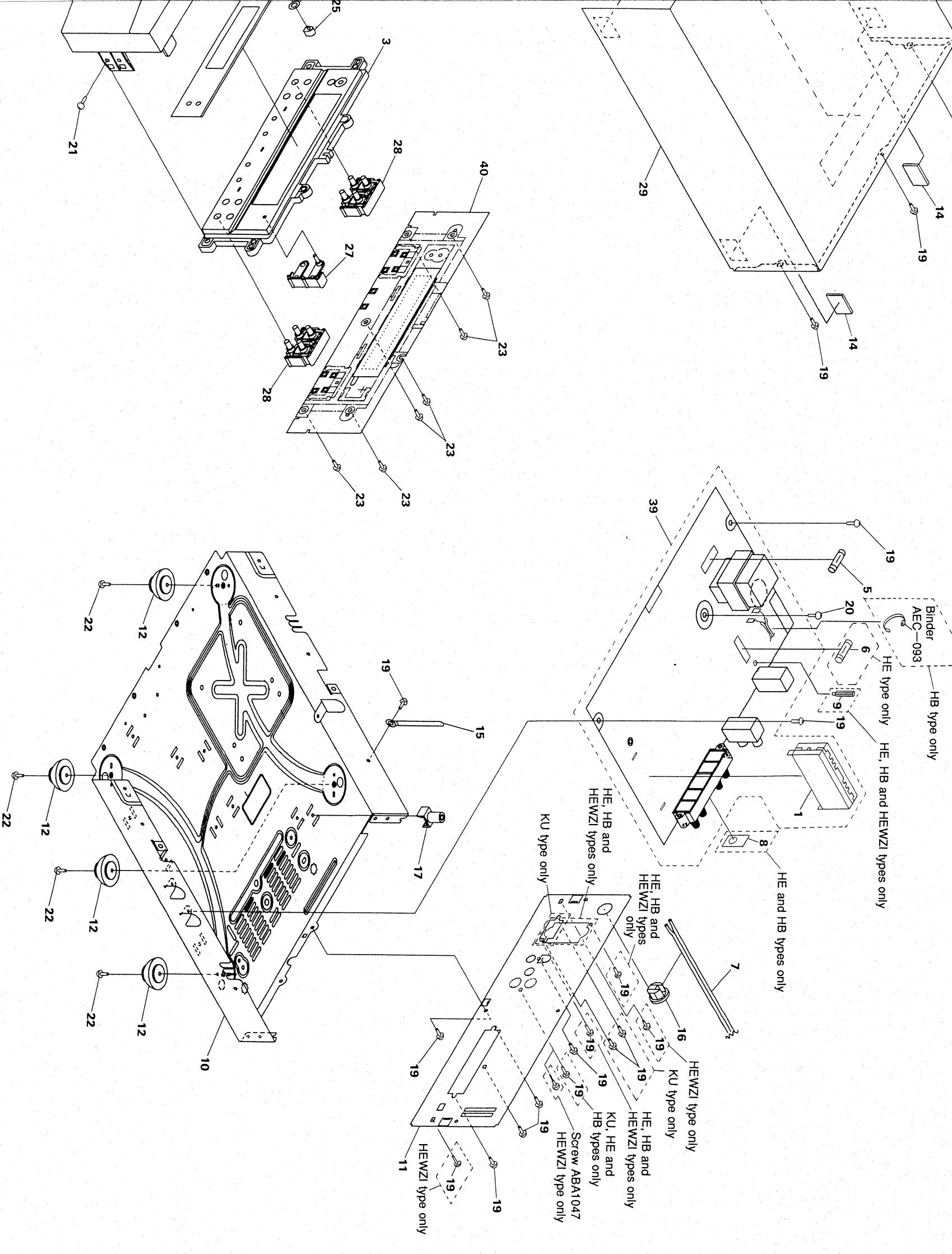
• The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

• Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

### • Parts List (FOR F-C3/KU and HE)

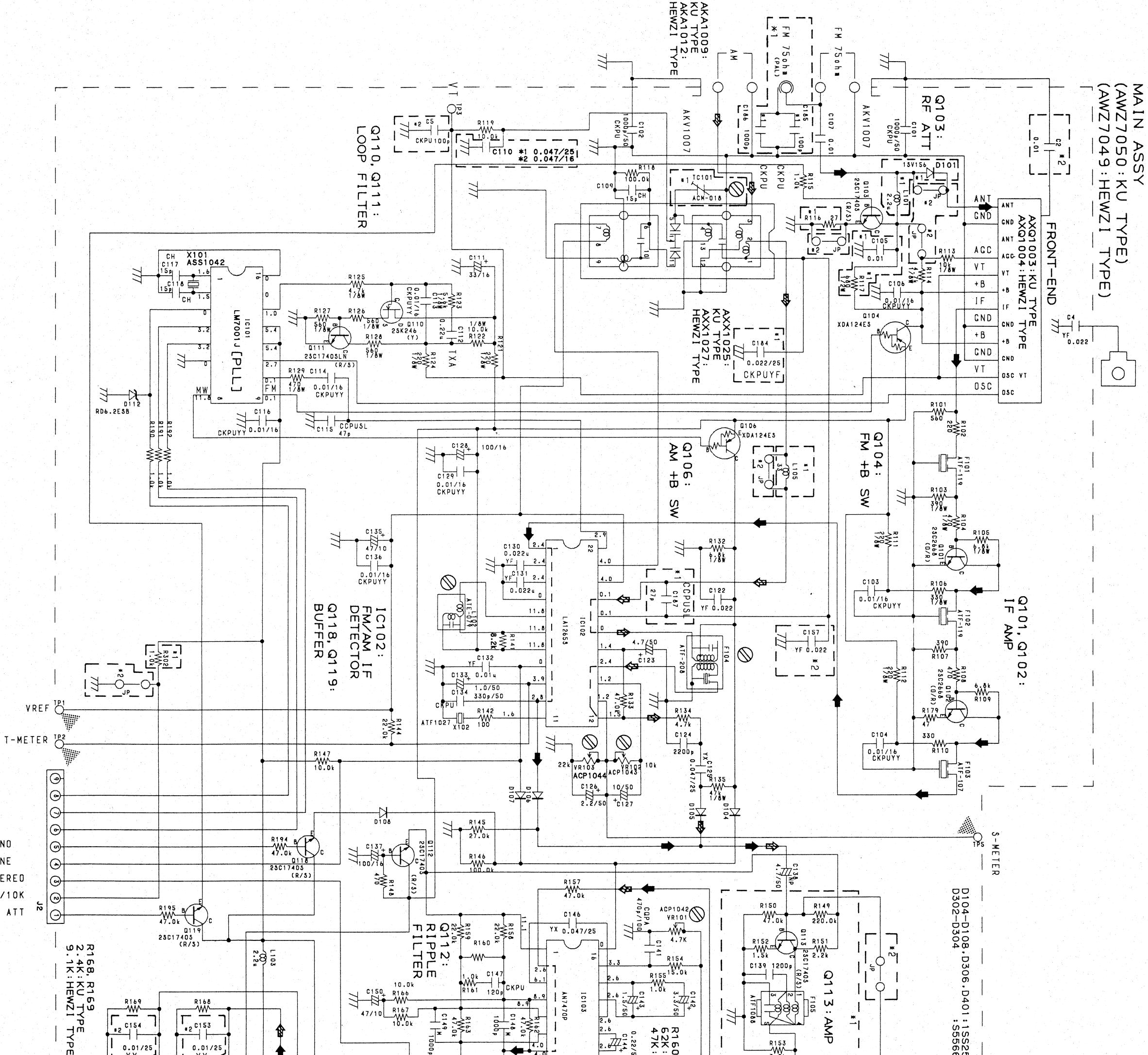
Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	3-SERIAL F.E MODULE ASSEMBLY AXQ1003			36	R.PAD	AHA7011
	2	FRONT PANEL (For KU type)	AMB7079		37	PACKING CASE (For KU type)	AHD7015
	2	FRONT PANEL (For HE type)	AMB7027		37	PACKING CASE (For HE type)	AHD7014
	3	SUB PANEL (For KU type)	AMB7073		38	PACKING SHEET	AHG1093
	3	SUB PANEL (For HE type)	AMB7029		39	MAIN ASSEMBLY (For KU type)	AWZ7050
	4	FRONT PANEL (AL)			39	MAIN ASSEMBLY (For HE type)	AWZ7048
	4	FUI (500mA/125V) (For KU type)	AEK-136		40	DISPLAY ASSEMBLY (For KU type)	AWZ7043
	5	FUI (T400mA/250V) (For HE type)	AEK-504		40	DISPLAY ASSEMBLY (For HE type)	AWZ7041
	5	FU2 (T2A/250V) (HE type only)	AEK-511		41	SUB OPERATING INSTRUCTIONS (English/German/French/Italian/Swedish/Spanish/Dutch/Portuguese) (For HE type)	ARIH7003
	6	AC POWER CORD (T2A/250V) (HE type only)					
	6	AC POWER CORD (For KU type)	ADG1058				
	7	AC POWER CORD (For KU type)	ADG1049				
	8	SPACER (HE type only)	AEC1236				
	9	PCB POST (HE type only)	DEC1390				
	10	CHASSIS					
	11	REAR PANEL (For KU type)	ANCT060				
	11	REAR PANEL (For HE type)	ANCT058				
	12	REAR INSULATOR	PNW2363				
	13	WASHER	ABE7001				
	14	CUSHION RUBBER	AEB7004				
	15	BINDER	AEC-826				
	16	CORD STOPPER (For KU type)	AEP-113		32		
	16	CORD STOPPER (For HE type)	AEC-882		33		
	17	PCB MOULD	AMR1525		34		
	18	65 LABEL (KU type only)	ORW1069		34		
	19	SCREW (STEEL)	ABA1006		31		
	20	SCREW	ABA1018				
	21	SCREW	BBZ30P100FZK				
	22	SCREW	BPZ26P080FMC				
	23	SCREW	AAK7059				
	24	DISPLAY PANEL					
	25	LED LENS	PNW2019				
	26	NAME PLATE (AL)	RAN1013				
	27	BUTTON	AAD7015				
	28	BUTTON	RAC1859				
	29	BONNET	ANE7010				
	30	OPERATING INSTRUCTIONS (English) (For KU type)	ARB7005				
	30	OPERATING INSTRUCTIONS (English/German/French/Italian/Swedish/Spanish/Dutch/Portuguese) (For HE type)	ARE7010				
	31	PLUG CORD	ADE-052				
	32	CORD WITH PLUG	ADE-085				
	33	FM ANTENNA	ADH1005				
	34	LOOP ANTENNA	ATB1006				
	35	FPAD	AHA7010				





**NOTE :** Screws adjacent to ▼ mark on product are used for disassembly.

### 3.1 MAIN ASSY (For KU and HEWZI types)

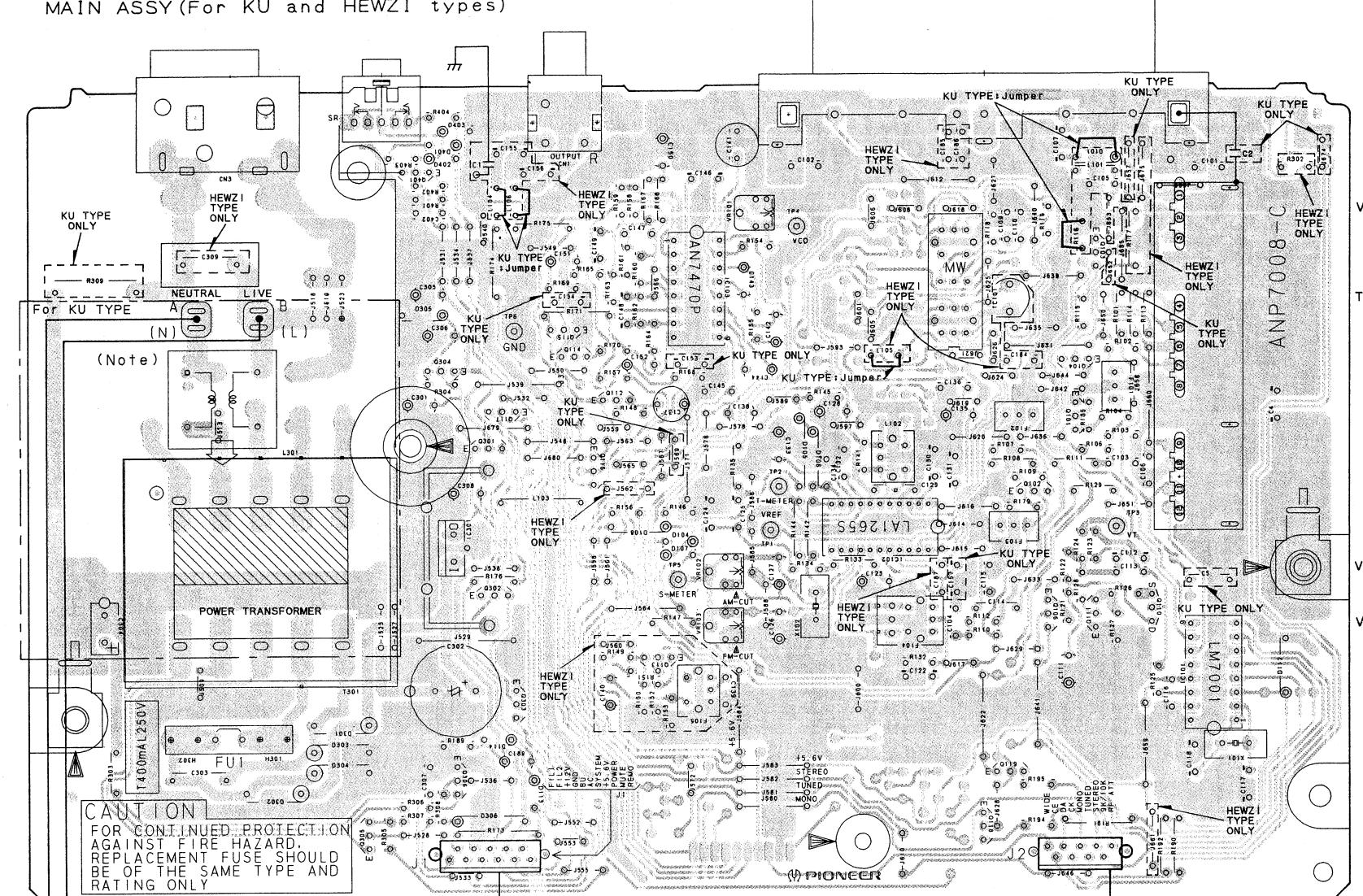




## MAIN ASSY (For KU and HEWZI types)

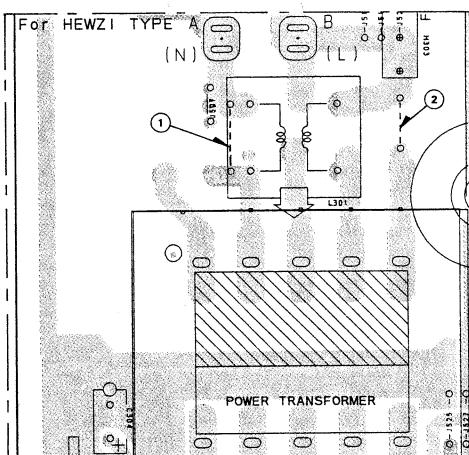
This PCB connection diagram is viewed from the parts mounted side.

A



C

Note: For HEWZI type, PCB diagram is changed into the following:



## Line Voltage Selection (For HEWZI)

Line Voltage can be changed by the following modification:

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the L301 with the jumper-lines ① and ② follows.

Voltage	L301 or jumper-lines
220V-230V	Change the jumper-lines ① and ② into the L301.
240V	Change the L301 into the jumper-lines ① and ②.

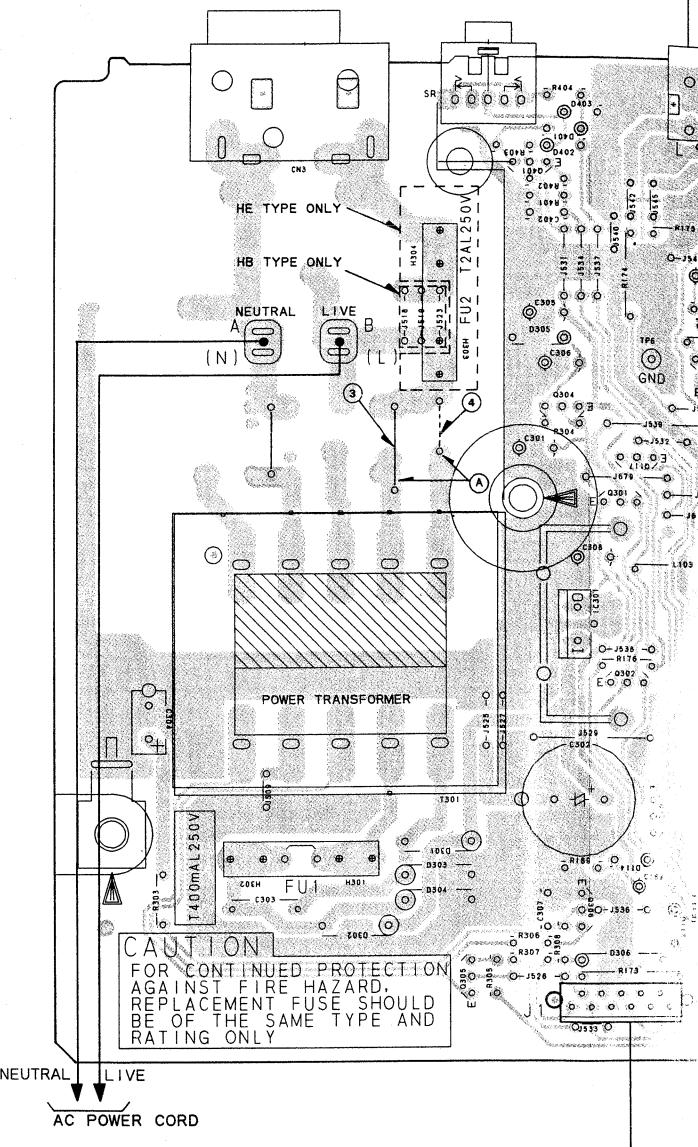
NOTE: When replacing a PCB which has the primary winding circuit of Power-transformer, be sure to compare its circuit with the diagram in Service Manual. jumper-lines on the PCB may have to be removed. Forgetting this check-up will cause a serious damage.

4. Stick the line voltage label on the rear panel.

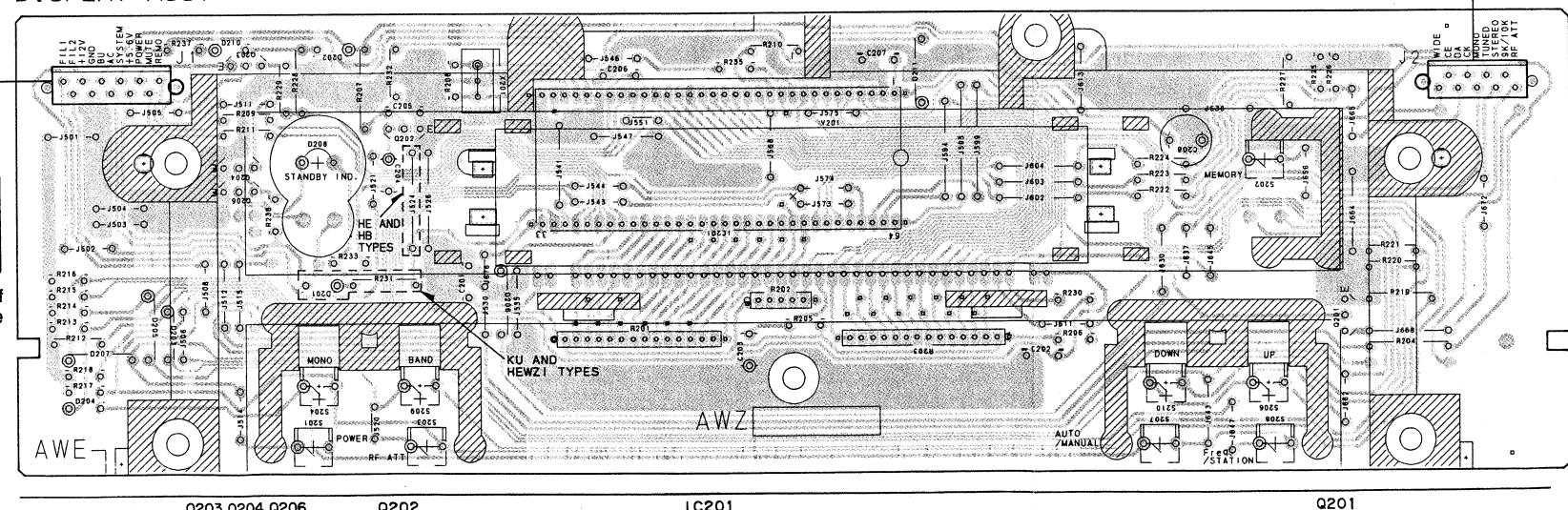
Part No.	Description
AAX-193	220V label
AAX-192	240V label

Q401  
VR101  
TC101  
Q115  
Q114  
Q304 Q104  
Q112  
Q117 Q101  
Q301  
Q116  
Q102  
IC102  
IC301  
Q302  
Q110  
Q106 Q111  
IC101  
Q303  
Q119  
Q306  
Q118  
Q305

## MAIN ASSY (For HE and HB types)



## DISPLAY ASSY



Line Volt  
Line Voltage  
1. Disconnect  
2. Remove it  
3. Change th

Voltage  
220V-230'  
240V

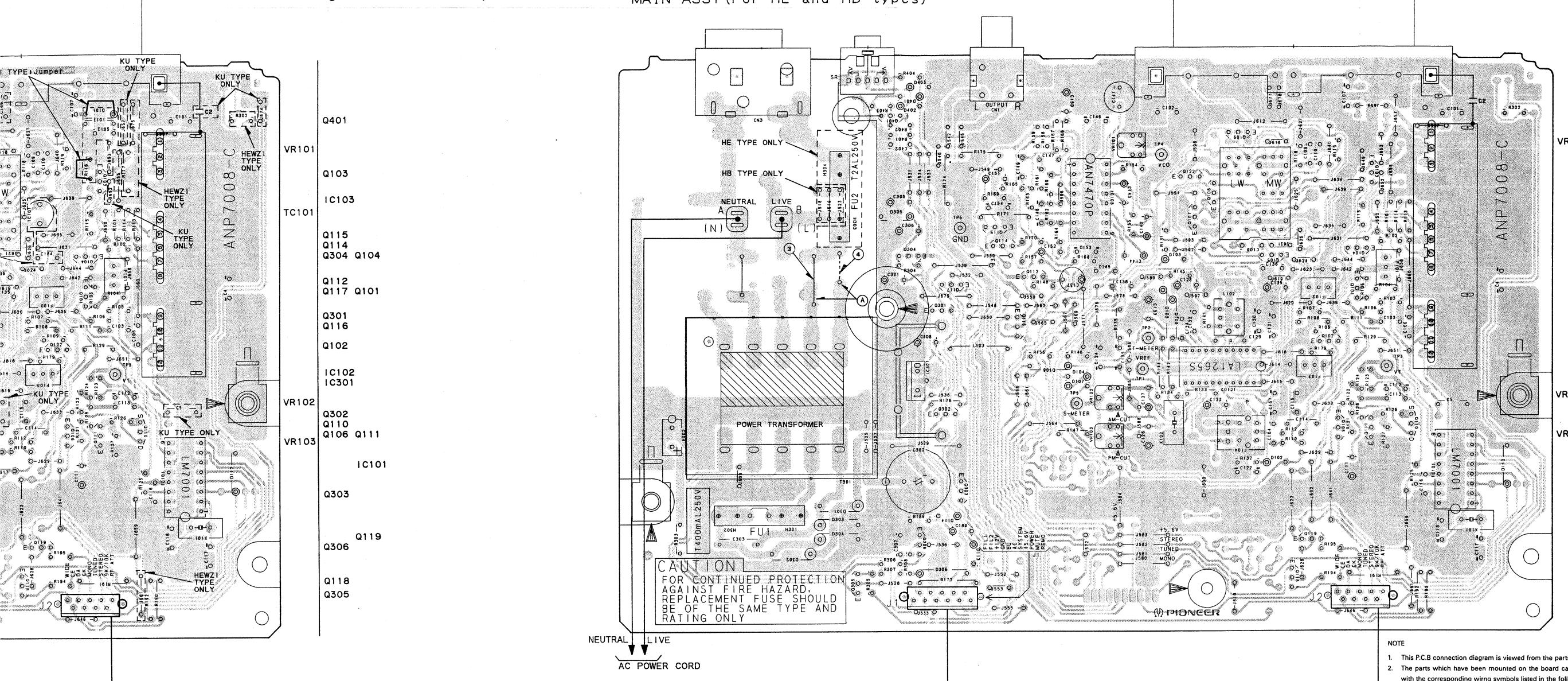
NOTE: Wher  
circui  
circui  
jumper  
Forge

4. Stick the

Part No.  
AAX-19  
AAX-19

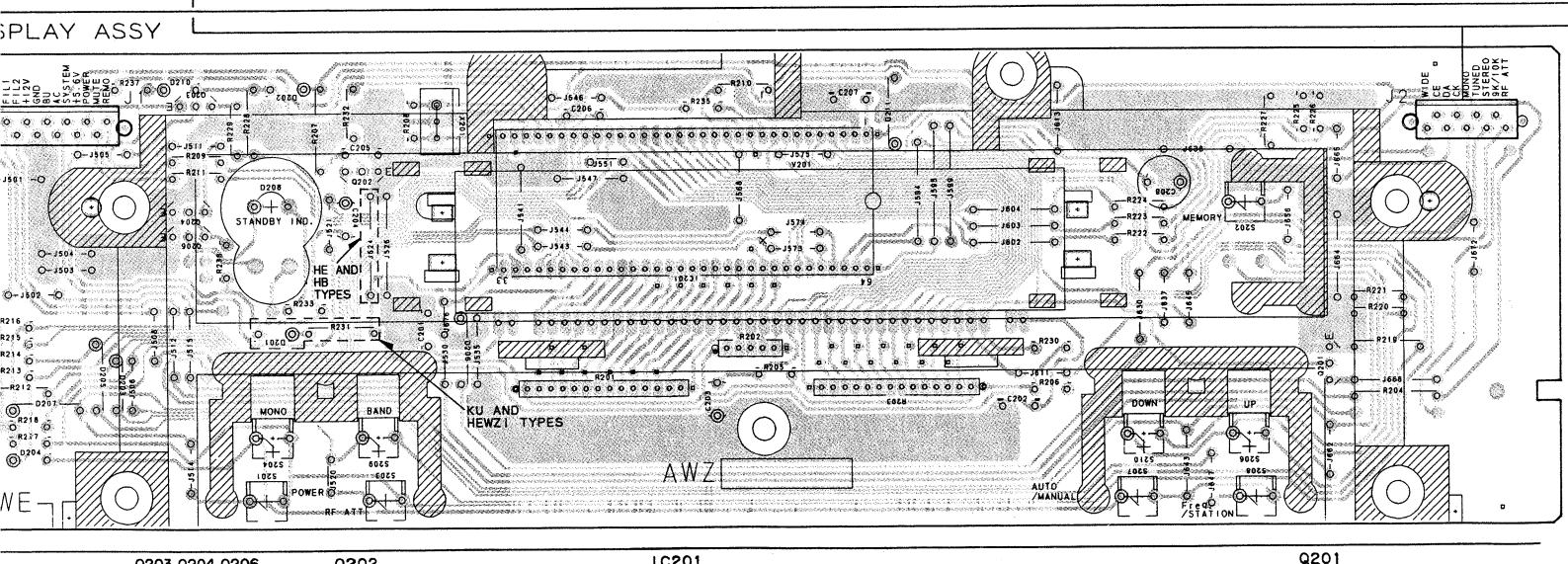
This PCB connection diagram is viewed from the parts mounted side.

MAIN ASSY (For HE and HB types)



NOTE  
 1. This PCB connection diagram is viewed from the parts mounted side.  
 2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)



Line Voltage Selection (For HE and HB)

Line Voltage can be changed by the following modification:

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the position of the jumper-lines Ⓐ follows.

Voltage	jumper-line Ⓢ position
220V-230V	Ⓐ③
240V	Ⓐ④

NOTE: When replacing a PCB which has the primary winding circuit of Power-transformer, be sure to compare its circuit with the diagram in Service Manual. jumper-lines on the PCB may have to be removed. Forgetting this check-up will cause a serious damage.

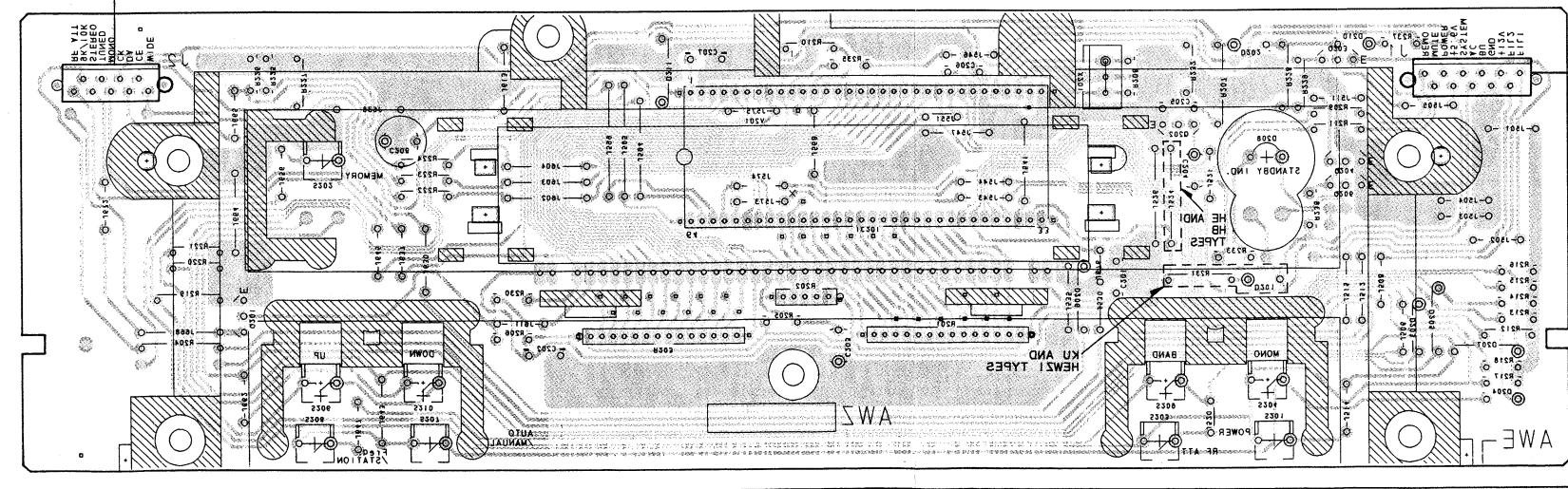
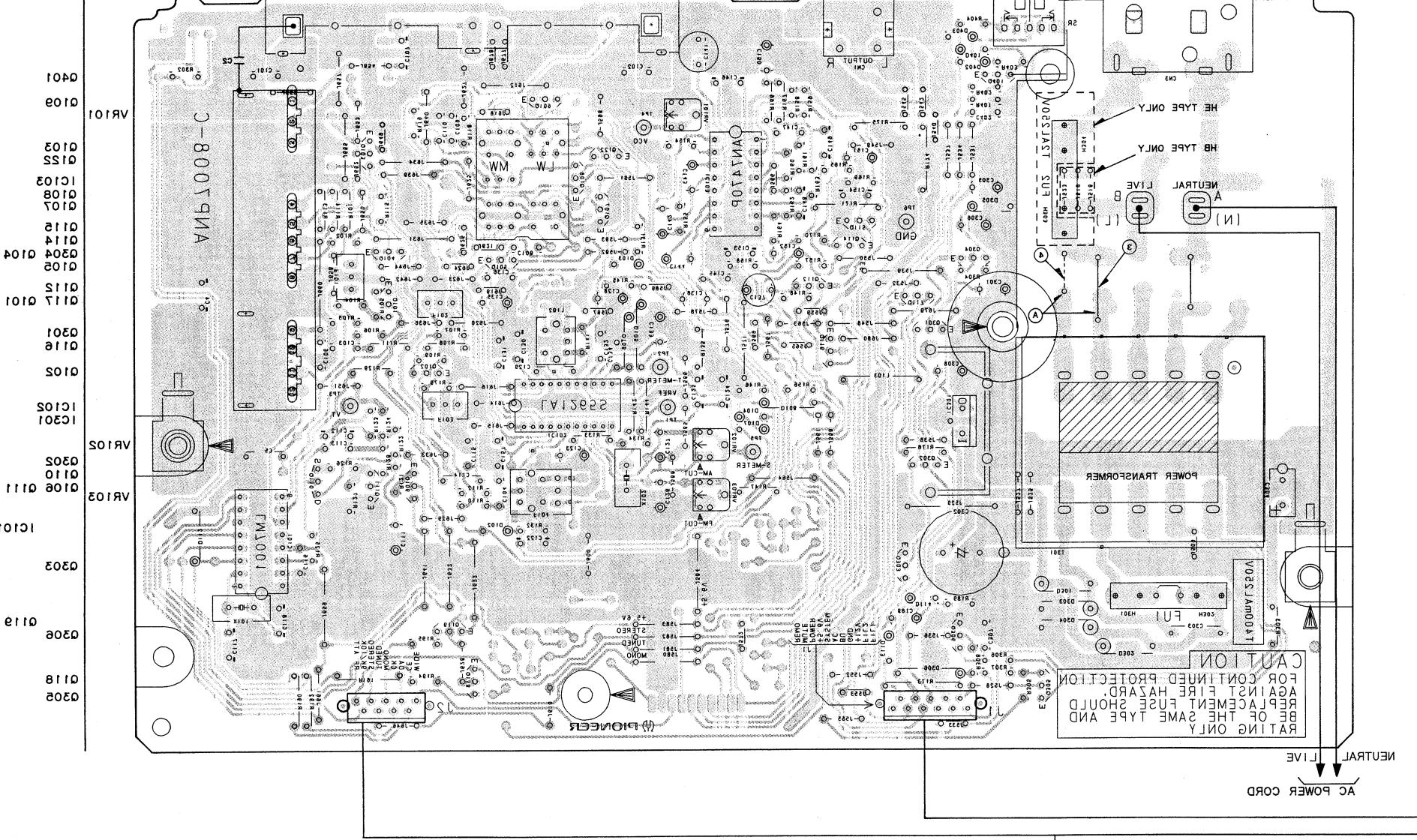
4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label

3. The capacitor terminal marked with (◎) (double circles) shows negative terminal.  
 4. The diode terminal marked with (◎) (double circles) shows cathode side.  
 5. The transistor terminal to which E is affixed shows the emitter.

## MAIN ASSY (For HE and HB types)

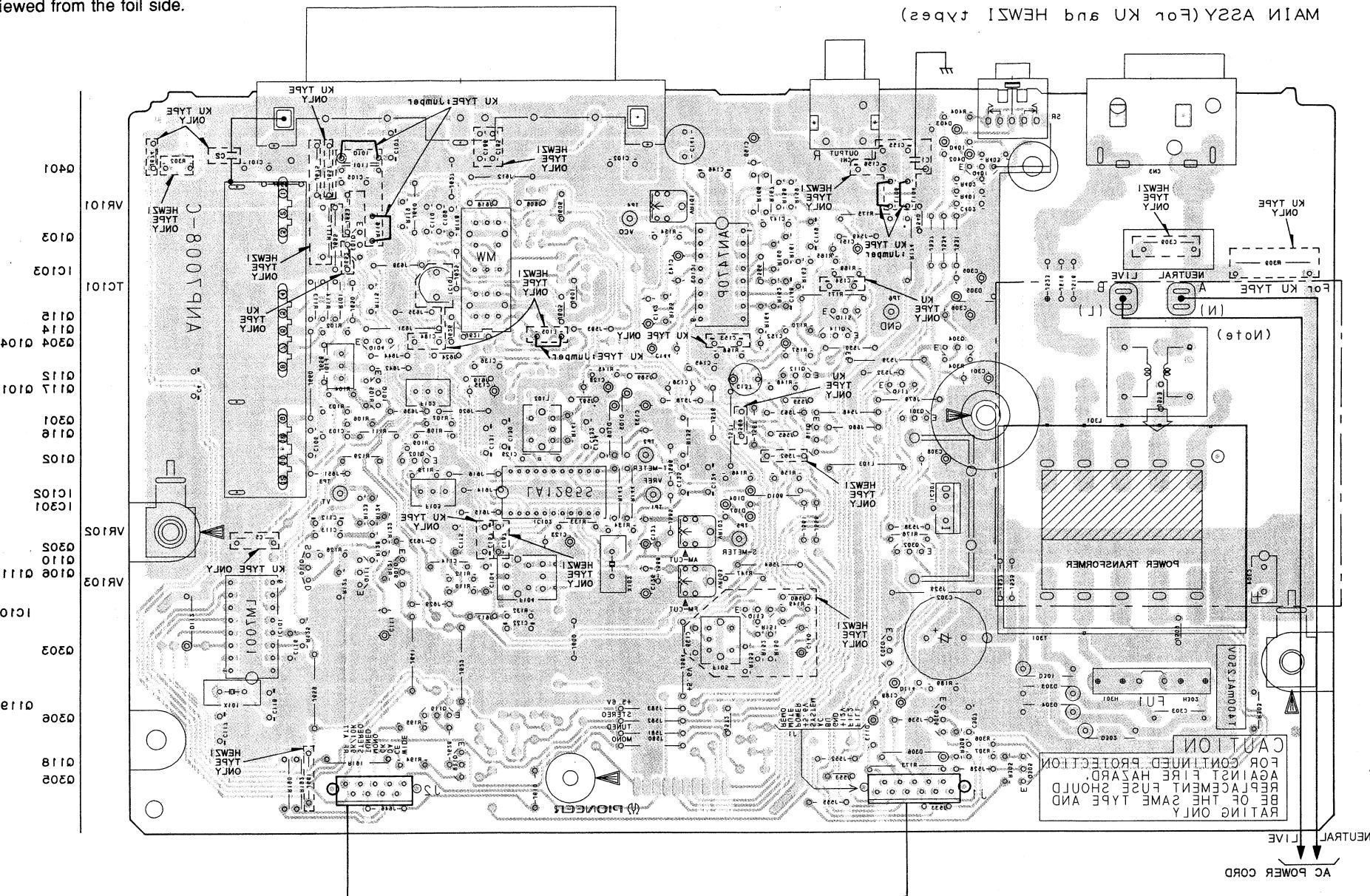
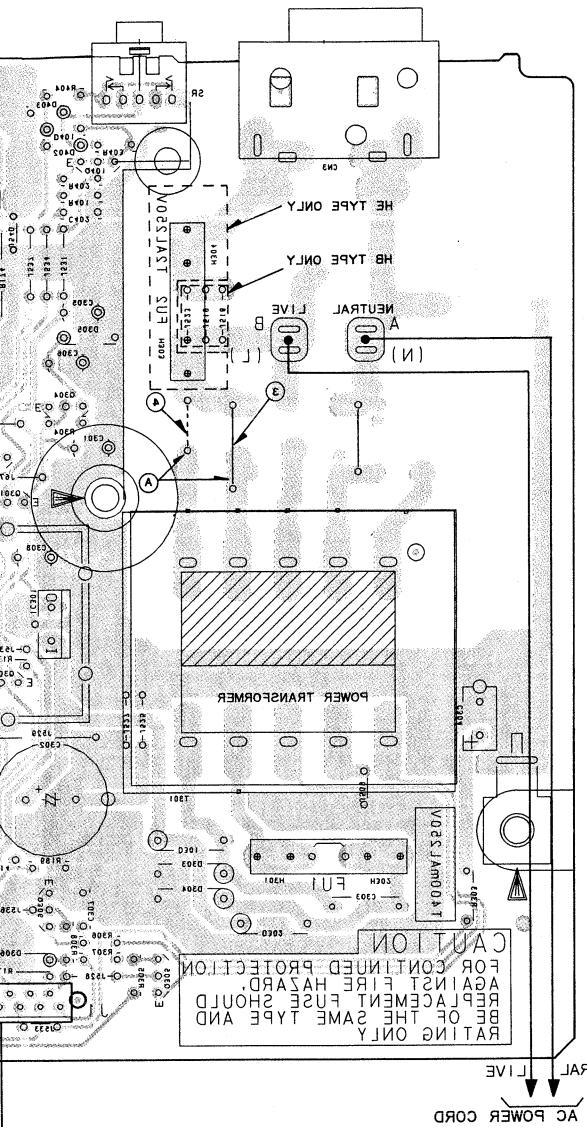
This PCB connection diagram is viewed from the foil side.



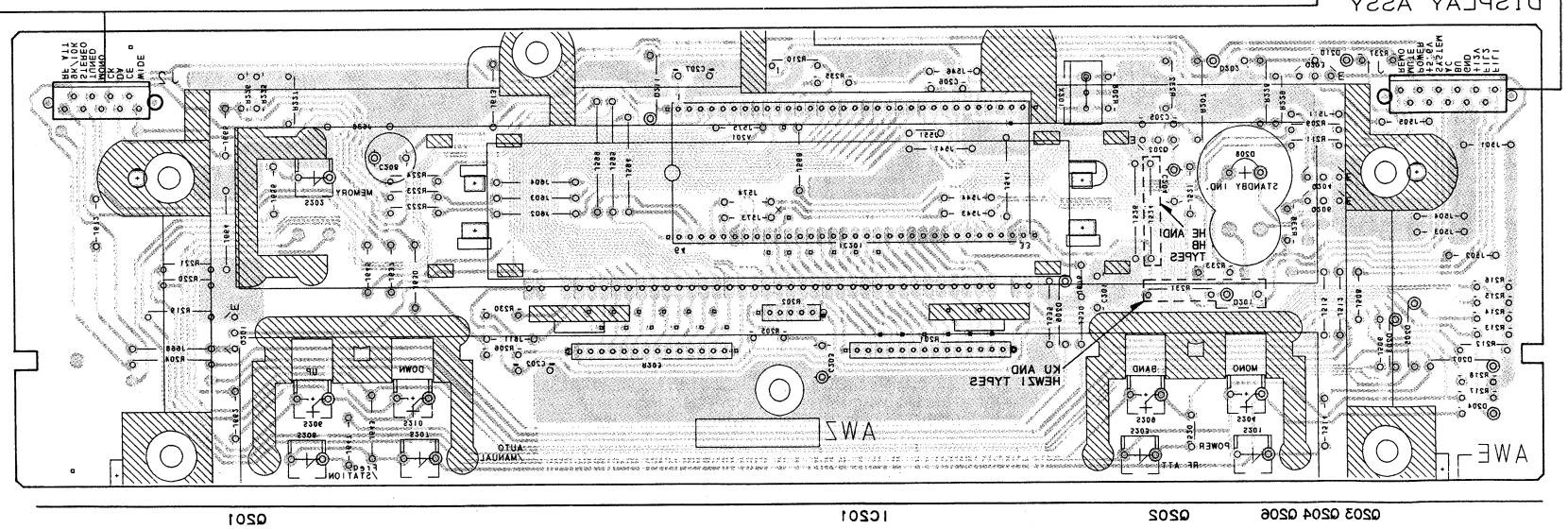
## MAIN ASSY (For HE and HB types)

This PCB connection diagram is viewed from the foil side.

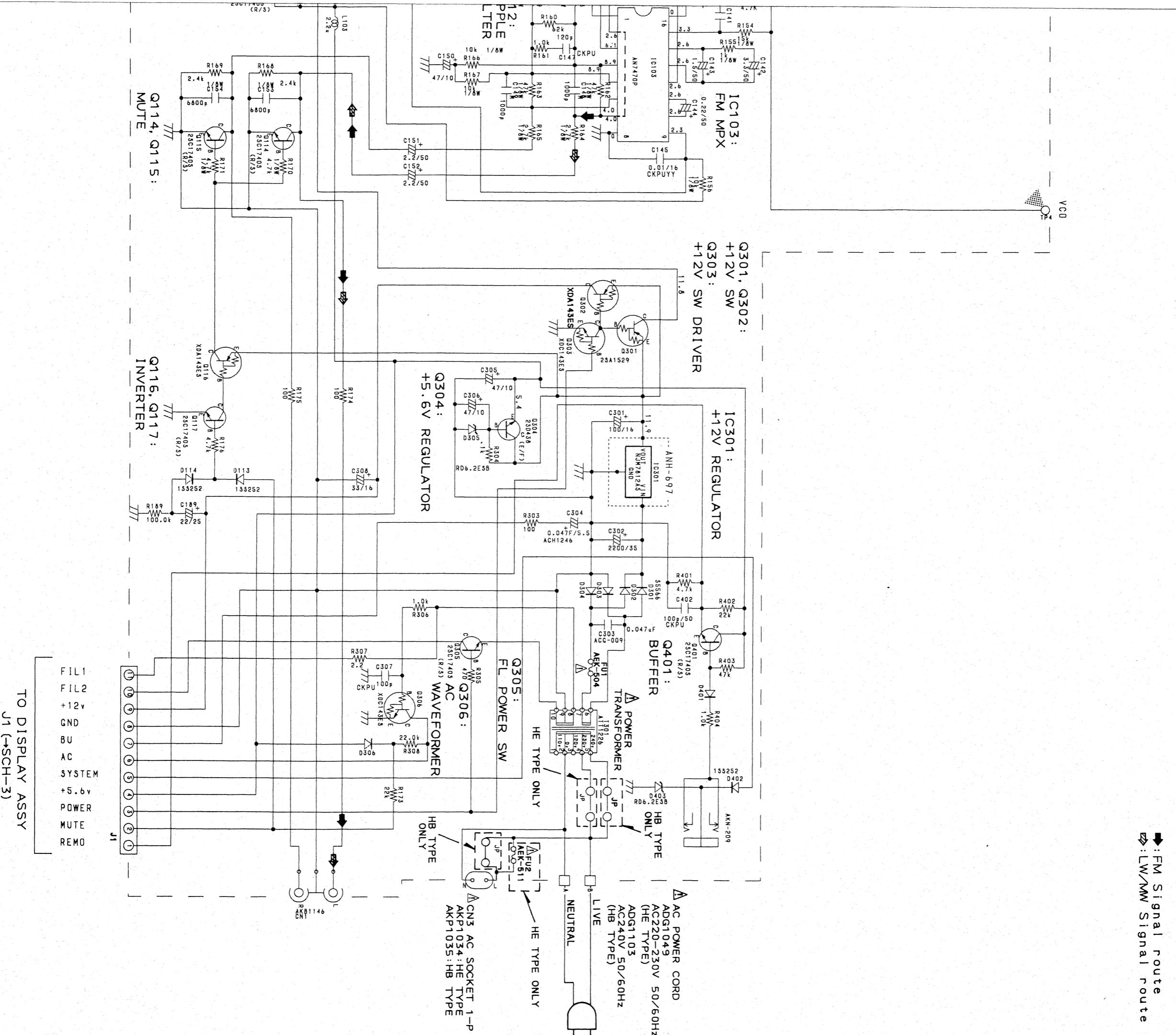
## MAIN ASSY (For KU and HEMZI types)



Note: For HEM71 type, PCB diagram is  
shown in the following:







→: FM Signal route

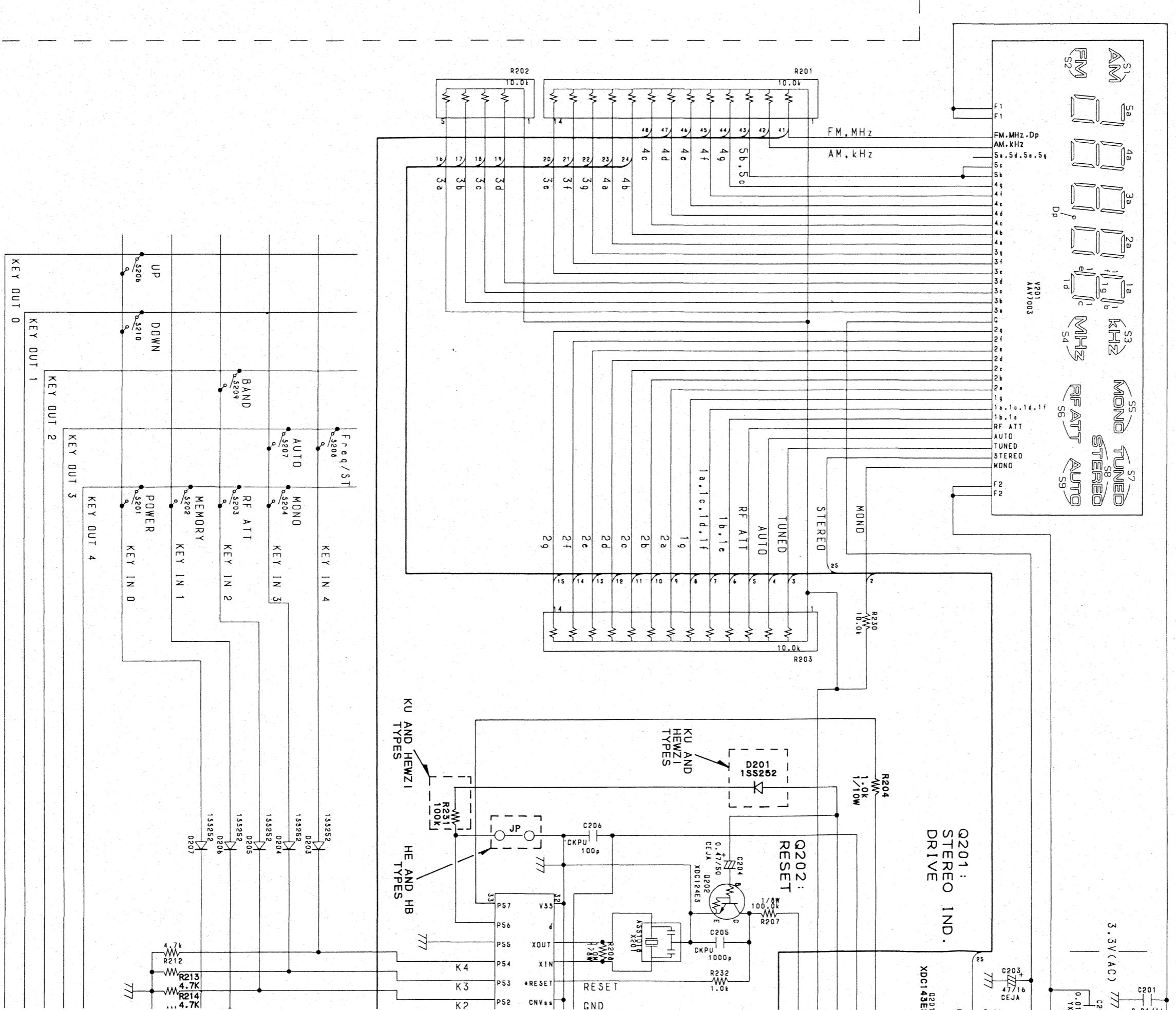
SCH-2

**MAIN ASSY  
(HE, HB)**

SCH-2

DISPLAY ASSY (AWZ7043:KU TYPE)  
(AWZ7041:HE AND HB TYPES)

(AWZ7042:HEWZ | TYPE)



TO MAIN ASSY J1  
(→SCH-1) or (→SCH-2)

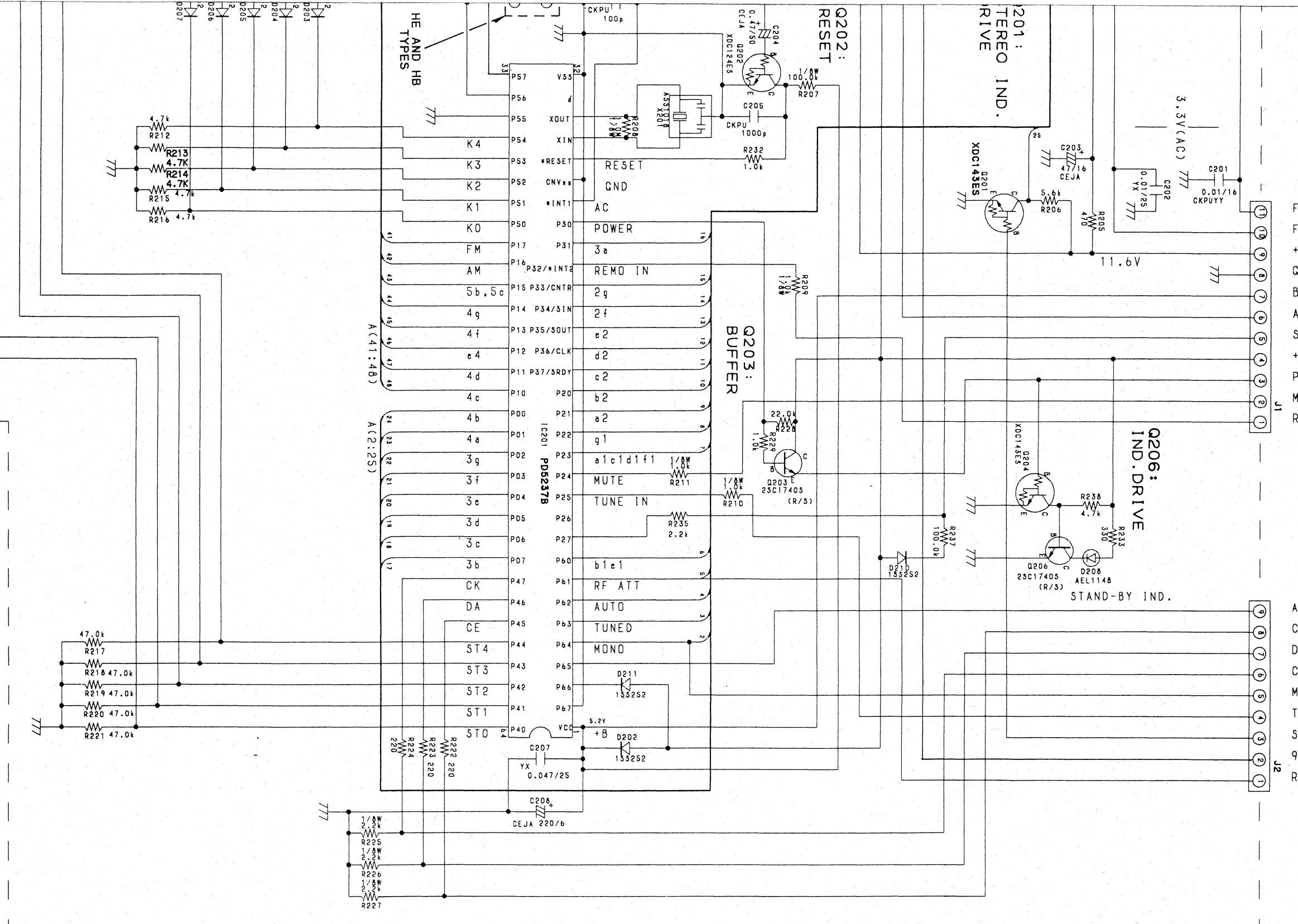
TO MAIN ASSY J2  
(→SCH-1) or (→SCH-2)

SCH-3

1  
2  
V  
k up  
TEM  
6V  
ER  
E  
O IN

W/N  
ED  
REO  
1-0 k  
ATT

A



DISPLAY ASSY

SCHÖ

## 4. PCB PARTS LIST

(For F-C3/KU and HE)

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 $\Omega$	$\rightarrow$	$56 \times 10^1$	$\rightarrow$	561	.....	RD1/8PM 561J
47k $\Omega$	$\rightarrow$	$47 \times 10^3$	$\rightarrow$	473	.....	RD1/4PS 473J
0.5 $\Omega$	$\rightarrow$	0R5	.....			RN2H 0R5K
1 $\Omega$	$\rightarrow$	010	.....			RS1P 010K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k $\Omega$	$\rightarrow$	$562 \times 10^1$	$\rightarrow$	5621	.....	RN1/4PC 5621F
----------------	---------------	-------------------	---------------	------	-------	---------------

Mark	No.	Description	Parts No.	Mark	Mark	No.	Description	Parts No.	Mark
<b>LIST OF ASSEMBLIES</b>									
<b>MAIN ASSEMBLY (For HE type)</b>									
TUNER ASSEMBLY (For HE type)		AWE7002			SEMICONDUCTORS				
└ DISPLAY ASSEMBLY		AWZ7041			IC103				AN7470P
└ MAIN ASSEMBLY		AWZ7048			IC102				LA1265S
TUNER ASSEMBLY (For KU type)		AWE7004			IC101				LM7001J
└ DISPLAY ASSEMBLY		AWZ7043			IC301				NJM7812AS
└ MAIN ASSEMBLY		AWZ7050			Q301				2SA1529
<b>DISPLAY ASSEMBLY (For KU and HE types)</b>									
<b>SEMICONDUCTORS</b>									
IC201		PD5237B			Q103				2SC1740S
Q203,Q206		2SC1740S			Q110				2SC1740S
Q202		XDC124ES			Q104,Q106,Q108				2SC1740SLN
Q201,Q204		XDC143ES			Q116,Q302				2SC2668
D201 – D207,D210,D211		1SS252			Q105,Q107,Q109,Q122,Q303				XDC143ES
D208		AEL1148			Q306				XDC143ES
<b>SWITCHES AND RELAYS</b>									
S201 – S204,S206 – S210		ASG1034			D102 – D108,D113,D114,D306				1SS252
<b>CAPACITORS</b>									
C208		CEJA221M6			D401,D402				1SS252
C203		CEJA470M16			D112,D305,D403				RD6.2ESB
C204		CEJAR47M50			D301 – D304				S5566
C202		CKDYX103M25			<b>COILS AND FILTERS</b>				
C207		CKDYX473M25			L102				ATE-079
C206		CKPUYB101K50			F101,F102				ATF-119
C205		CKPUYB102K50			F103				ATF-107
C201		CKPUYY103M16			F104				ATF-208
<b>RESISTORS</b>									
R201,R203		RA13T103J			L103				LAU2R2K
R202		RA4T103J			<b>TRANSFORMERS</b>				
Other Resistors		RD1/8PM□□□J			△ T301 (6.5VA)				ATT1226
<b>OTHERS</b>									
X201	(4.19MHz)	ASS1018			<b>CAPACITORS</b>				
V201	FL TUBE	AAV7003			C303 (0.047/AC25V)				ACG-009
					C304 (47000/5.5)				ACH1246
					C109,C117,C118				CCDCH150J50
					C115				CCPUSL470J50
					C138				CEANP4R7M50
					C133				CEAS010M50
					C127				CEAS100M50
					C128,C137,C301				CEAS101M16
					C143				CEAS1R5M50
					C189				CEAS220M25
					C302				CEAS222M35



## 5. ADJUSTMENTS

### ADJUSTMENT OF THE FM TUNER SECTION

- Set the mode selector to FM BAND.
- Connect the wiring as shown in the Fig. 1.

Step No.	Adjustment Title	FM SG(1kHz, $\pm 75$ kHz dev.)		Reception Frequency Display	Adjustment	
		Frequency(MHz)	Level(dB $\mu$ V)		Adjustment Location	Specifications
1	Center adjustment	98	60	98.0MHz	L102	Adjust so that the DC voltage between the TP1(VREF) and TP2(T-METER) becomes $0V \pm 50mV$ .
2	VCO adjustment	Non modulation	60	98.0MHz	VR101	Adjust so that the output of the TP4 (VCO) becomes $76kHz \pm 0.5kHz$ .
3	TUNED IND. Lighting level	98	24 ( $\pm 3$ dB)	98.0MHz	VR103	Adjust so that the indicators of TUND IND. start to light up.

### ADJUSTMENT OF MW TUNER SECTION

- Set the mode selector to AM(MW) BAND.
- Connect the wiring as shown in the Fig. 1.

Step No.	Adjustment Title	AM SG(400Hz, 30% Mod.)		Reception Frequency Display	Adjustment	
		Frequency(kHz)	Level(dB $\mu$ V/m)		Adjustment Location	Specifications
1	Tracking adjustment *2	603	Low input	603kHz	AM RF Tuning block antenna coil	Adjust so that the DC voltage between the TP5(S-METER) and GND becomes at maximum level.
		1395		1395kHz	TC101	
3	IFT adjustment *2	603		603kHz	F104	
4	TUNED IND. Lighting level	999 *1	55 ( $\pm 5$ dB)	999kHz *1	VR102	Adjust so that the indicator of TUNED IND. start to lights up.

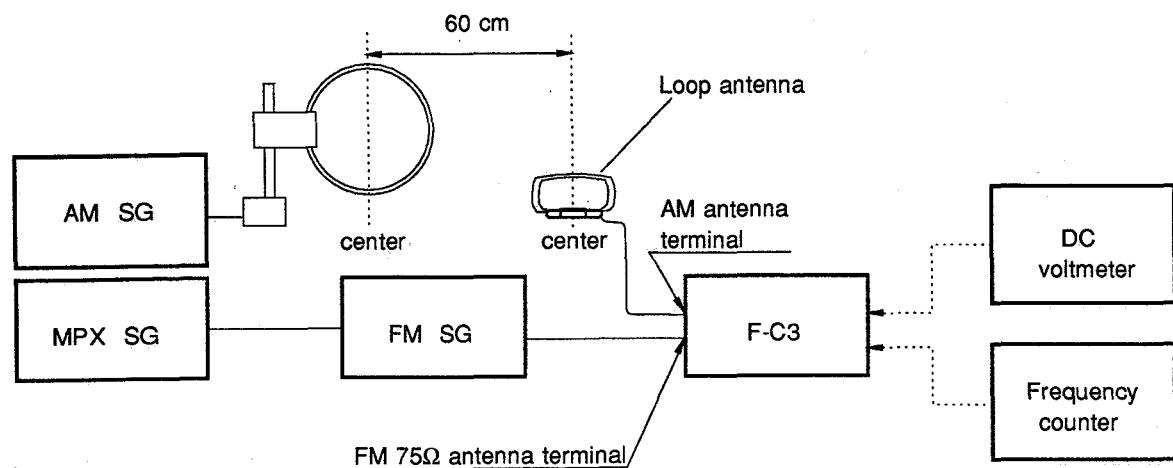
Note1:

For the area using 10kHz step (KU type : 10kHz), frequencies should be as follows:

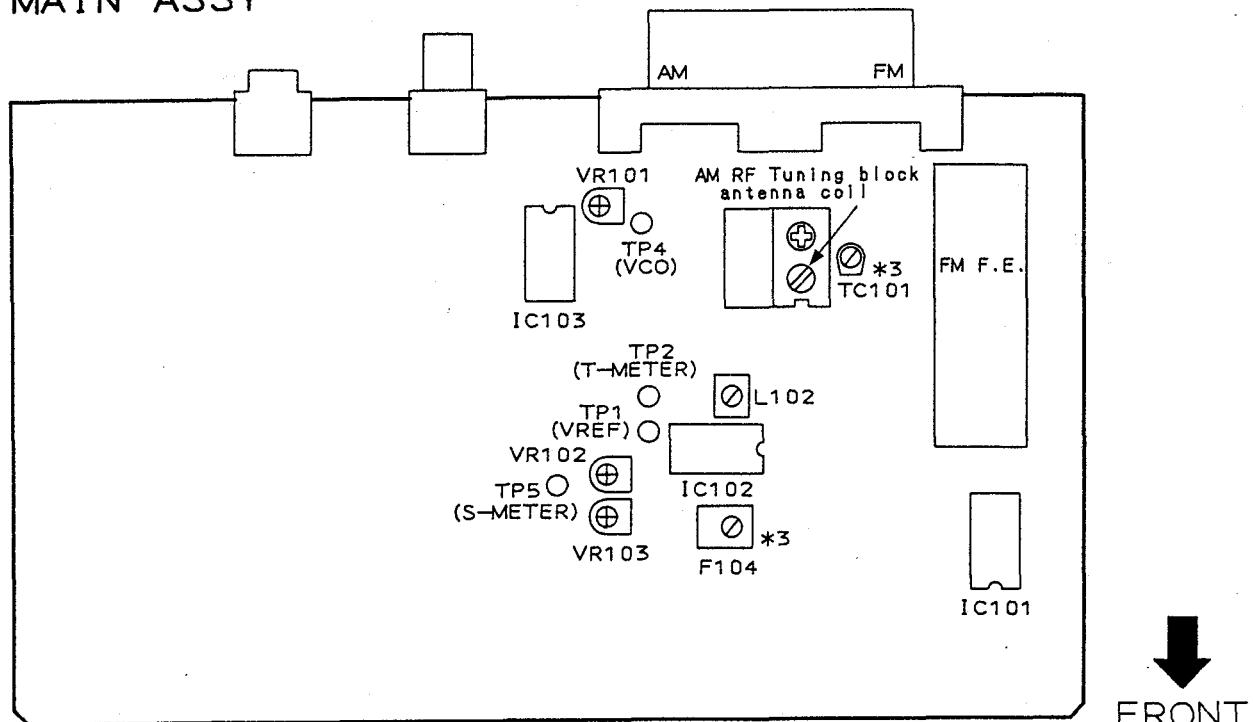
\*1 : 1000kHz

Note2:

Adjustment marked with “\*2” is only for HEWZI type.



MAIN ASSY



\*3 : HEWZI type only

## 6. FOR HEWZI AND HB TYPES

### NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

### 6.1 CONTRAST OF MISCELLANEOUS PARTS FOR HEWZI TYPE

F-C3/HEWZI and F-C3/KU have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		F-C3/KU	F-C3/HEWZI	
$\Delta$	TUNER assembly	AWE7004	AWE7003	
	DISPLAY assembly	AWZ7043	AWZ7042	
	MAIN assembly	AWZ7050	AWZ7049	
$\Delta$	Screw (STEEL)	.....	ABA1047	Refer to P.5
	AC power cord	ADG1058	ADG1049	
	FM antenna	ADH1005	ADH1002	
	FU1 Fuse (500mA/125V)	AEK-136	.....	
$\Delta$	FU1 Fuse (T400mA/250V)	.....	AEK-504	
	Cord stopper	AEP-113	AEC-882	
	Packing case	AHD7015	AHD7014	
	Sub panel	AMB7073	AMB7029	
	Front panel	AMB7079	AMB7027	
	Rear panel	ANC7060	ANC7057	
	Operating instructions (English)	ARB7005	.....	
	Operating instructions (German/Italian)	.....	ARC7005	
NSP	PCB post	.....	DEC1390	
	65 label	ORW1069	.....	

### MAIN ASSEMBLY

AWZ7049 and AWZ7050 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7050	AWZ7049	
	FE module assembly (3L)	AXQ1003	.....	
	FE module assembly (4L)	.....	AXQ1004	
	AM RF tuning block (MW)	AXX1025	AXX1027	
	D101	.....	1SV156	
	Q113	.....	2SC1740S	
	R116	.....	RD1/8PM270J	
	R117	.....	RD1/2PM681J	
	R149	.....	RD1/8PM224J	
	R150	.....	RD1/8PM473J	
	R151	.....	RD1/8PM222J	
	R152	.....	RD1/8PM152J	

Mark	Symbol & Description	Part No.		Remarks
		AWZ7050	AWZ7049	
△	R153	.....	RD1/8PM392J	
	R160	RD1/8PM623J	RD1/8PM473J	
	R168,R169	RD1/8PM242J	RD1/8PM912J	
	R302	.....	RD1/8PM102J	
	R309	ACN-208	.....	
	C1	.....	CKDYX103M25	
	C2	CKDYB103K50	.....	
	C5	CKPUYB101K50	.....	
	C105	.....	CKDYB103K50	
	C110	CKPUYF473Z16	CKDYX473M25	
	C139	.....	CKDYB122K50	
	C140	.....	CEAS4R7M50	
	C153,C154	CKDYX103M25	.....	
	C155,C156	.....	CKDYB332K50	
	C157	CKDYF223Z50	.....	
△	C184	.....	CKPUYF223Z25	
	C185	.....	CKPUYB101K50	
	C186	.....	CKPUYB102K50	
	C187	.....	CCPUSL270J50	
	C309	.....	ACG1002	
	TC101	.....	ACM-018	
	F105	.....	ATF1088	
	L101	.....	LAU2R2J	
	L104,L106	.....	LAU2R2K	
	L105	.....	LAU330J	
△	L301	ATF-163	ATF1135	
	Antenna terminal 4-P	AKA1009	.....	
	Antenna terminal PAL 2-P	.....	AKA1012	
	CN3 AC socket 1-P	AKP1078	AKP1034	

## DISPLAY ASSEMBLY

Although AWZ7042 and AWZ7043 are different in part number, they consist of the same components.

## 6.2 CONTRAST OF MISCELLANEOUS PARTS FOR HB TYPE

F-C3/HB and F-C3/HE have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		F-C3/HE	F-C3/HB	
	TUNER assembly MAIN assembly	AWE7002 AWZ7048	AWE7001 AWZ7047	

Mark	Symbol & Description	Part No.		Remarks
		F-C3/HE	F-C3/HB	
△	AC power cord	ADG1049	ADG1103	
	Binder	.....	AEC-093	
△	FU2 Fuse (T2A/250V)	AEK-511	.....	
	Rear panel	ANC7058	ANC7059	
	Operating instructions (English/German/French/Italian/ Swedish/Spanish/Dutch/Portuguese)	ARE7010	.....	
	Operating instructions (English)	.....	ARB7005	
	Sub operating instructions (English/German/French/Italian/ Swedish/Spanish/Dutch/Portuguese)	ARH7003	.....	

## MAIN ASSEMBLY

AWZ7047 and AWZ7048 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7048	AWZ7047	
△	CN3 AC socket 1-P	AKP1034	AKP1035	

## 7. SPECIFICATIONS

### FM Tuner Section

Frequency range	87.5 MHz to 108 MHz
Usable Sensitivity (IHF)	12.7 dBf (1.2 $\mu$ V/75 $\Omega$ )
50 dB Quieting Sensitivity	Mono; 18 dBf (2.2 $\mu$ V/75 $\Omega$ ) Stereo; 38.3 dBf (22.6 $\mu$ V/75 $\Omega$ )
Sensitivity (DIN)	Mono; 1.0 $\mu$ V/75 $\Omega$ Stereo; 35 $\mu$ V/75 $\Omega$
Signal-to-Noise Ratio	Mono; 78 dB (at 85 dBf) Stereo; 74 dB (at 85 dBf)
Signal-to-Noise Ratio (DIN)	Mono; 62 dB Stereo; 60 dB
Distortion	0.3 % (1 kHz)
Alternate Channel Selectivity	60 dB (300 kHz)
Stereo Separation	40 dB (1 kHz)
Frequency Response	30 Hz to 15 kHz $\pm$ 1 dB
Image Response Ratio	50 dB
IF Response Ratio	90 dB
Antenna Input	75 $\Omega$ unbalanced
Output	650 mV (100 % MOD.)

### MW (AM) Tuner Section

Frequency range	
U.S. model	530 kHz to 1,700 kHz (Step 10 kHz)
U.K. model	531 kHz to 1,602 kHz (Step 9 kHz)
Sensitivity (IHF, Loop antenna)	350 $\mu$ V/m
Selectivity	20 dB
Signal-to Noise Ratio	50 dB
Antenna	Loop Antenna
Output	150 mV (30 % MOD.)

### LW Tuner Section (U.K. model only)

Frequency range	153 kHz to 281 kHz
Sensitivity (IHF, Loop antenna)	1,500 $\mu$ V/m
Selectivity	20 dB
Signal-to-Noise Ratio	50 dB
Antenna	Loop Antenna
Output	158 mV (30 % MOD.)

### Miscellaneous

Power Requirements	
U.S. model	AC 120 V, 60 Hz
U.K. model	AC 240 Volts ~, 50/60 Hz
Power Consumption	10 W
Dimensions	260 (W) x 95.5 (H) x 336 (D) mm 10-1/4 (W) x 3-3/4 (H) x 13-3/16 (D) in
Weight (without package)	2.3 kg (5 lb 1 oz)

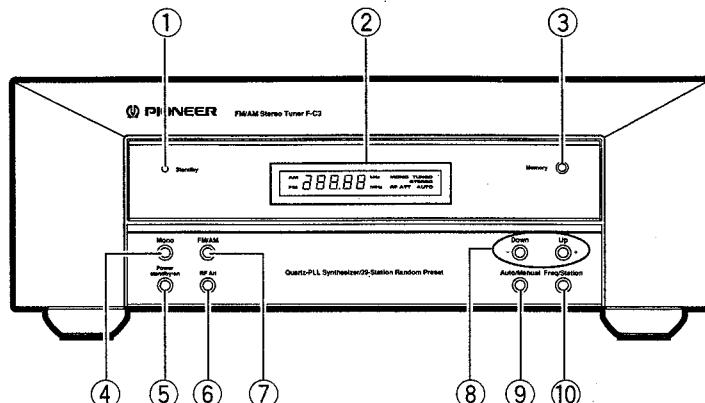
### Furnished Parts

FM T-type Antenna	1
AM Loop Antenna	1
Connecting Cord with Pin Plugs	1
Operating Instructions	1
Control cable	1

### NOTE:

Specifications and design subject to possible modification without notice, due to improvements.

## 8. PANEL FACILITIES



### ① Standby indicator

Goes out when power is turned on; lights when power is set to standby.

### ② Display section

### ③ Memory button

### ④ Mono button

### ⑤ Power standby/on switch

This is the switch for electric power.

**On:** When set to the on position, power is supplied and the unit becomes operational.

**Standby:** When set to the standby position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

When the Standby indicator lights, the unit is in STANDBY.

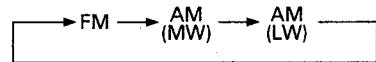
### ⑥ RF Att button

Press this RF attenuator button if the excessive strength of FM signals results in distortion. The RF ATT indicator will light in the display section.

- This function does not operate during AM broadcasts.

### ⑦ FM/AM button

Each time you press the button, the changes as follows.

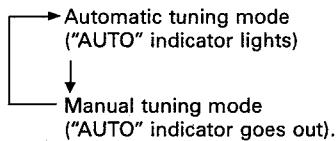


### ⑧ Tuning Up+ Down- button

Use to tune broadcast stations.

### ⑨ Auto/Manual button

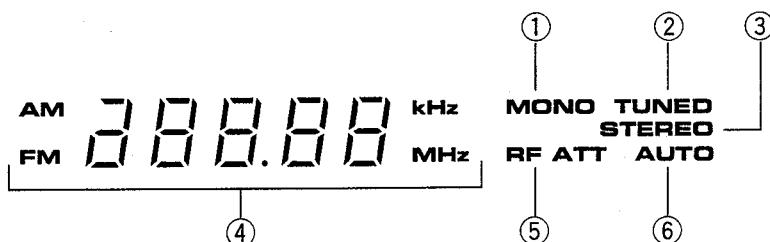
When this button is pressed, the tuning function changes alternately as follows:



- Auto tuning is not possible on the LW band.

### ⑩ Frequency/Station button

#### Display Section



① Lights when the Mono button is set to ON.

② Lights when broadcast is received.

③ Lights during reception of stereo broadcast.

④ Displays the frequency or station.

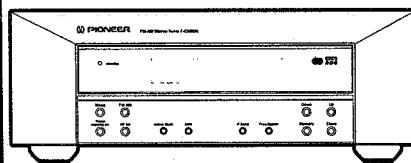
⑤ Lights when RF attenuator function is on.

⑥ Lights during auto tuning mode.

**PIONEER®**  
*The Art of Entertainment*

4209

# Service Manual



ORDER NO.  
**RRV1108**

FM/AM DIGITAL SYNTHESIZER TUNER

# F-C5RDS

**THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).**

Type	Model	Power Requirement	The voltage can be converted by the following method.
	F-C5RDS		
HE	○	AC220-230V	AC240V, *
HB	○	AC240V	AC220-230V, *
HEWZI	○	AC220-230V	AC240V, *

\* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

- For HB and HEWZI types, refer to page 30.

## CONTENTS

1. EXPLODED VIEWS, PACKING AND PARTS LIST	2
2. BLOCK DIAGRAM	5
3. FL INFORMATION	6
4. SCHEMATIC AND PCB CONNECTION DIAGRAMS	7
5. PCB PARTS LIST	26
6. ADJUSTMENTS	28
7. FOR HB AND HEWZI TYPES	30
8. CONNECTIONS	31
9. PANEL FACILITIES	32
10. SPECIFICATIONS	33

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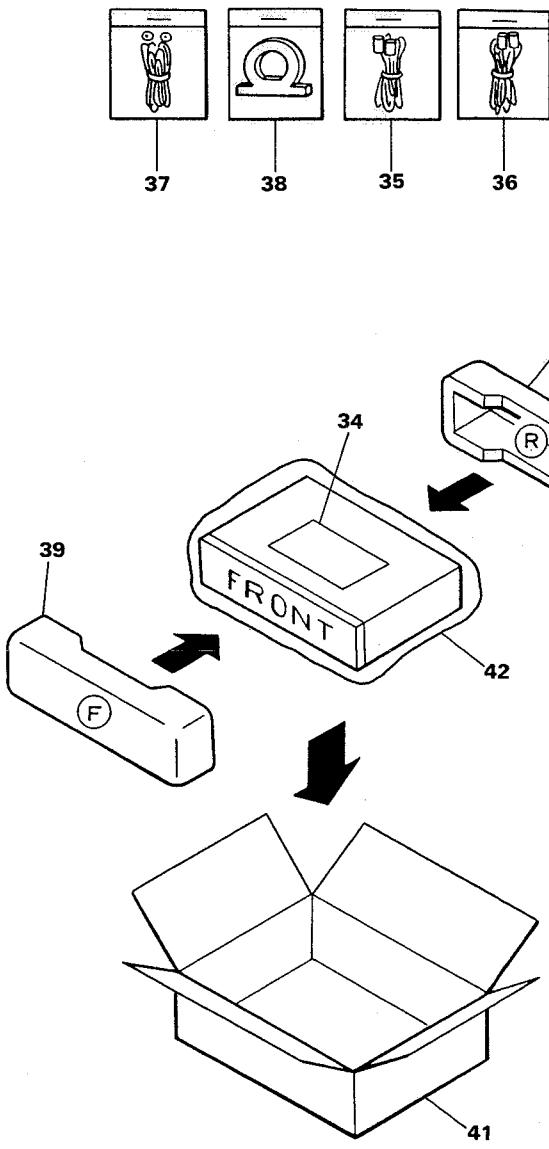
4309

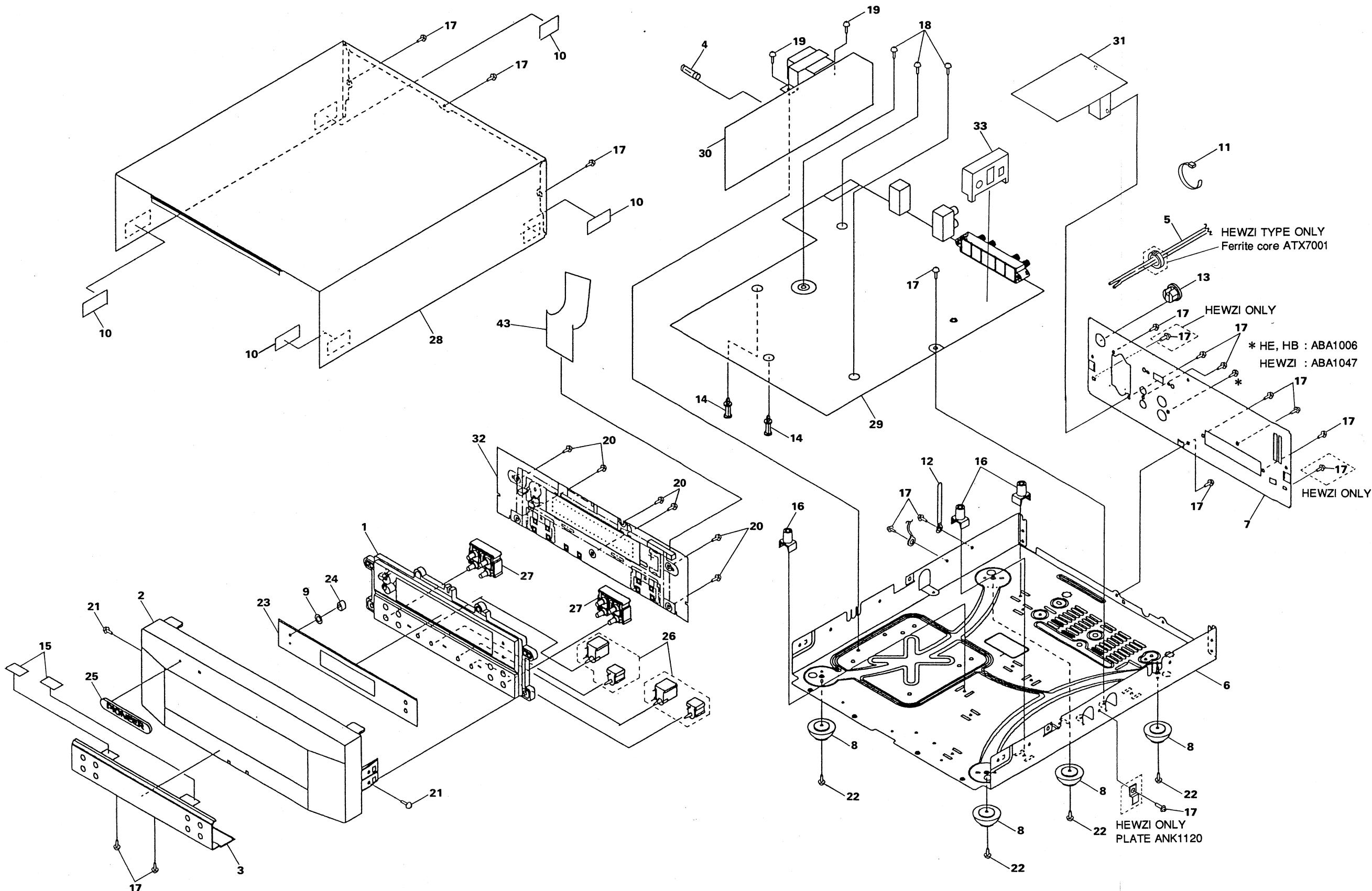
# 1. EXPLODED VIEWS, PACKING AND PARTS LIST

## NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

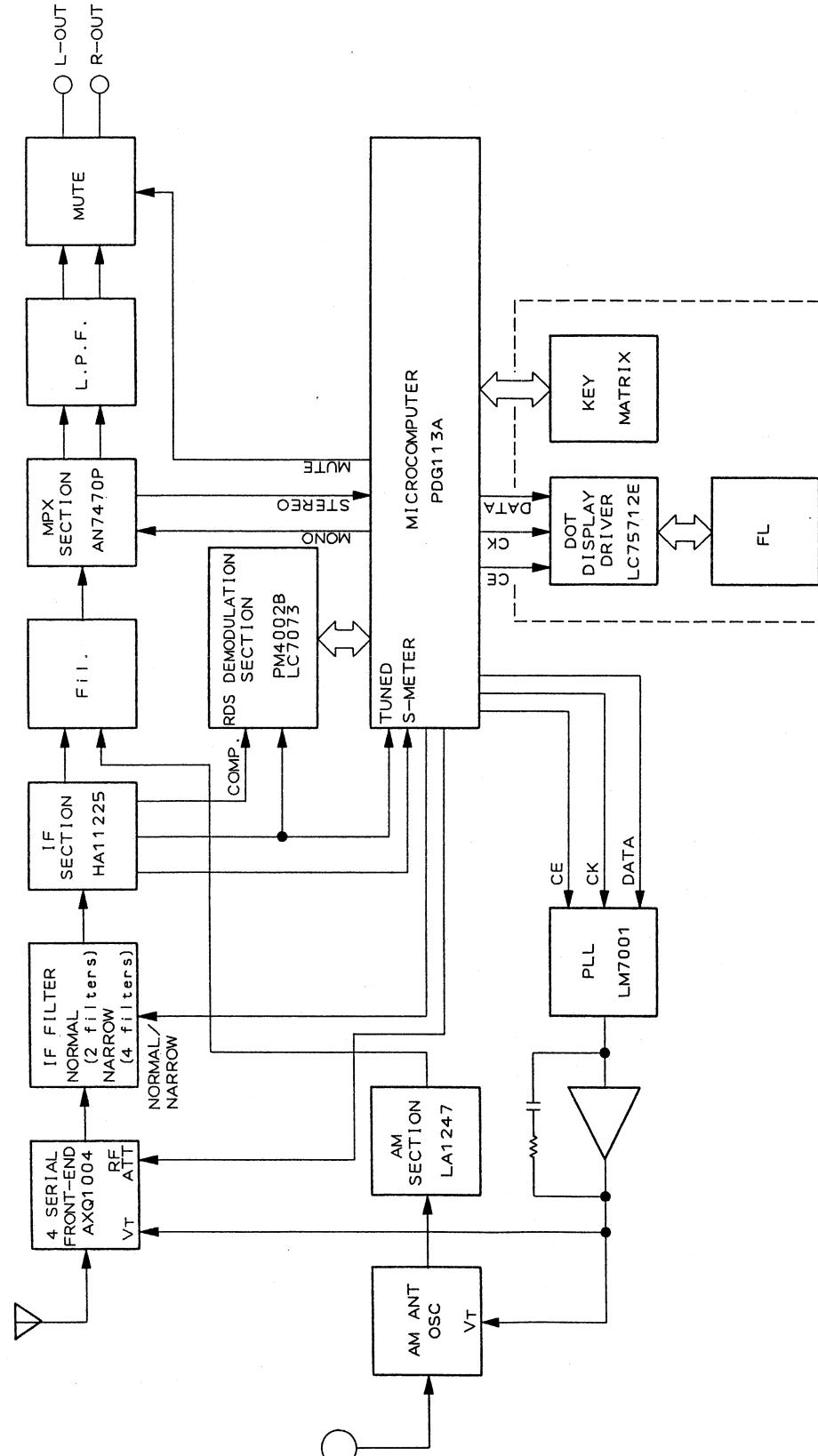
Mark No.	Description	Parts No.
1	SUB PANEL	AMB7029
2	FRONT PANEL	AMB7080
3	FRONT PANEL	ANB7005
$\Delta$ 4	FU1 FUSE (2.5A,250V)	AEK-512
$\Delta$ 5	AC POWER CORD	ADG1049
NSP 6	CHASSIS	ANA7006
7	REAR PANEL	ANC7095
8	INSULATOR	PNW2363
9	WASHER	ABE7001
10	CUSHION GUM	AEB7004
11	NYLON BINDER	AEC-093
12	BINDER	AEC-826
$\Delta$ 13	STRAIN RELIEF	AEC-882
14	PCB SPACER(3X12)	AEC1372
15	SPACER (PVC)	AEC7007
NSP 16	PCB MOULD	AMR1525
17	SCREW (STEEL)	ABA1006
18	SCREW	ABA1018
19	SCREW (STEEL)	ABA1048
20	SCREW	BBZ26P100FMC
21	SCREW	BBZ30P080FZK
22	SCREW	BBZ30P100FZK
23	DISPLAY PANEL	AAK7071
24	LED LENS	PNW2019
25	NAME PLATE (AL)	RAN1013
26	BUTTON	AAD7052
27	BUTTON	RAC1859
28	BONNET	ANE7010
29	TUNER ASSEMBLY	AWZ7272
30	POWER ASSEMBLY	AWZ7275
31	OUTLET ASSEMBLY	AWZ7279
32	DISPLAY ASSEMBLY	AWP7001
33	4 SERIAL F.E. MODULE ASSY	AXQ1004
34	OPE. INSTRUCTIONS (English/French/German/Italian/ Swedish/Dutch/Spanish/ Portuguese)	ARE7015
35	PLUG CORD	ADE-052
36	CORD WITH PLUG	ADE-085
37	FM ANTENNA	ADH1005
38	LOOP ANTENNA	ATB1011
39	F.PAD	AHA7010
40	R.PAD(PS)	AHA7011
41	PACKING CASE	AHD7055
42	PACKING SHEET	AHG1093
43	FLEXIBLE CABLE	ADD1114





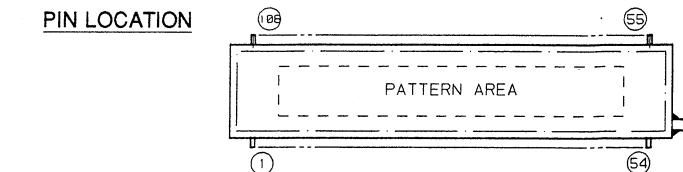
**NOTE: Screws adjacent to ▼ mark on product are used for disassembly**

## 2. BLOCK DIAGRAM

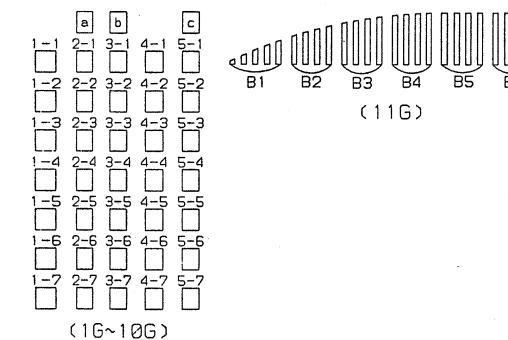
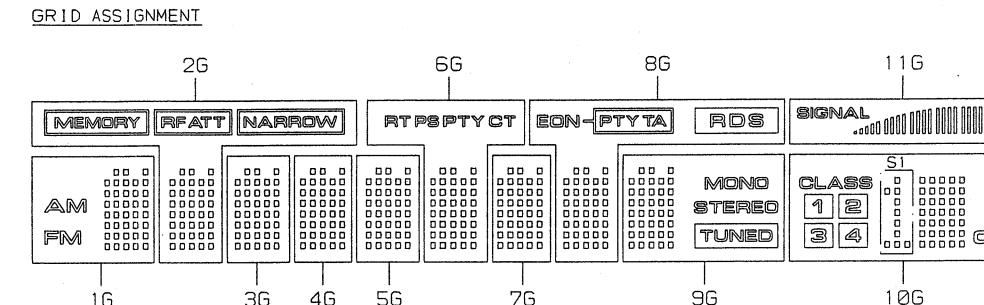


### **3. FL INFORMATION**

■ AAV7008 (V901)



NOTE	1) F1, F2 --- Filament	5) NC ----- No connection
	2) NP ----- No pin	6) 1G~11G ----- Grid
	3) NX ----- No extend pin	7) IC ----- Internal connection
	4) DL ----- Datum Line	8) Pin50 and pin73 are connected inside



## 4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

### NOTE FOR SCHEMATIC DIAGRAMS (Type 3A)

- When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
- Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
- RESISTORS:**  
Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.  
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.  
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
- CAPACITORS:**  
Unit: p:pF or μF unless otherwise noted.  
Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.  
Rated voltage: 50V except for electrolytic capacitors.
- COILS:**  
Unit: m:mH or μH unless otherwise noted.
- VOLTAGE AND CURRENT:**  
mV : Signal voltage at FM 1kHz, 100% MOD.  
or ← V : DC voltage (V) at no input signal unless otherwise noted.  
Value in ( ) is DC voltage at rated power.  
mA or ← mA : DC current at no input signal unless otherwise noted.
- OTHERS:**
  - ⊖ or ⊖ : Adjusting point.
  - ◀ : Measurement point.
  - The △ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- SCH—□ ON THE SCHEMATIC DIAGRAM:**  
SCH—□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
- SWITCHES (Underline indicates switch position):**

S901: POWER (STANDBY/ON)  
 S902: RF Att  
 S905: Class  
 S906: FM/AM  
 S911: Memory  
 S916: Active mode  
 S917: IF Band  
 S921: EON  
 S922: Mono  
 S924: Freq/Station  
 S925: Up  
 S926: Down

### NOTE FOR PCB DIAGRAMS:

- Part numbers in PCB diagrams match those in the schematic diagrams.
- A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
 		Transistor
 		Diode
 		Capacitor (Polarized)

- The transistor terminal marked with E or ⊖ shows the emitter.
- The diode terminal marked with ⊖ or C shows cathode side.
- The capacitor terminal marked with ⊖ or C shows negative terminal.

## 4.1 OVERALL WIRING DIAGRAM

SCH-1

A

A

DISPLAY ASSEMBLY  
(AWP7001)  
(→SCH-2)

6

0

Pinout diagram for J4 connector:

- Pin 1: AC
- Pin 2: V<sub>dd</sub>
- Pin 3: V<sub>cc</sub>
- Pin 4: GND
- Pin 5: -V
- Pin 6: FIL+
- Pin 7: FIL1
- Pin 8: FIL2
- Pin 9: CT
- Pin 10: FIL9

POWER ASSEMBLY

( AWZ7275 : HE TYPE  
 AWZ7276 : HB TYPE  
 AWZ7274 : HEWZI TYPE  
 (→SCH-3) )

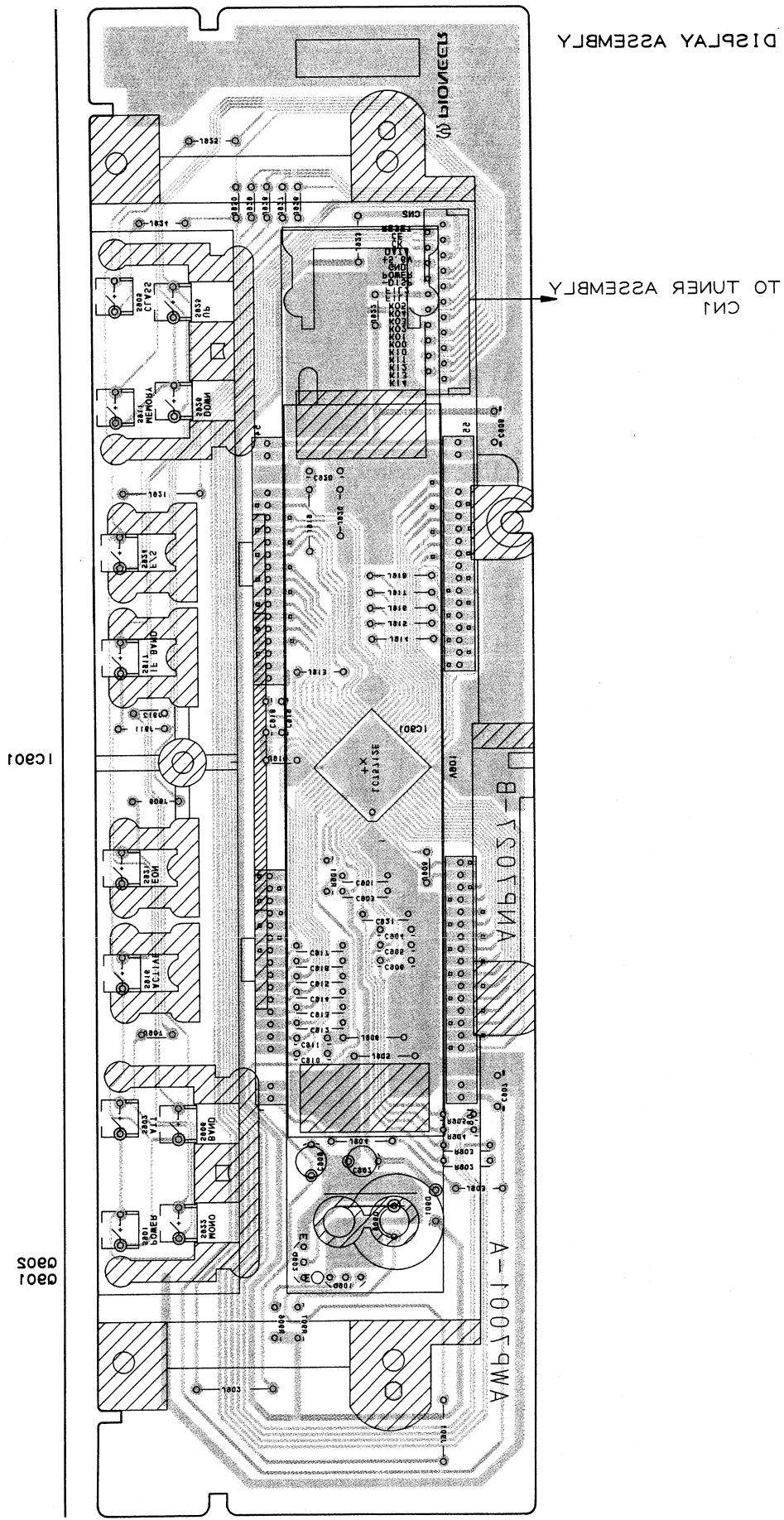
OUTLET ASSEMBLY  
 ( AWZ7279 : HE AND  
 HEWZI TYPES )  
 ( AWZ7278 : HB TYPE  
 (→SCH-3) )

## OVERALL

**SCH-1**

- This diagram is viewed from the foil side.

PCB-1



## 4.2 DISPLAY ASSEMBLY

- This diagram is viewed from the mounted parts side.

## DISPLAY ASSEMBLY

A

TO TUNER ASSEMBLY  
CN1

B

PCB-1

A

6

0

1

A

## DISPLAY ASSEMBLY (AWP7001)

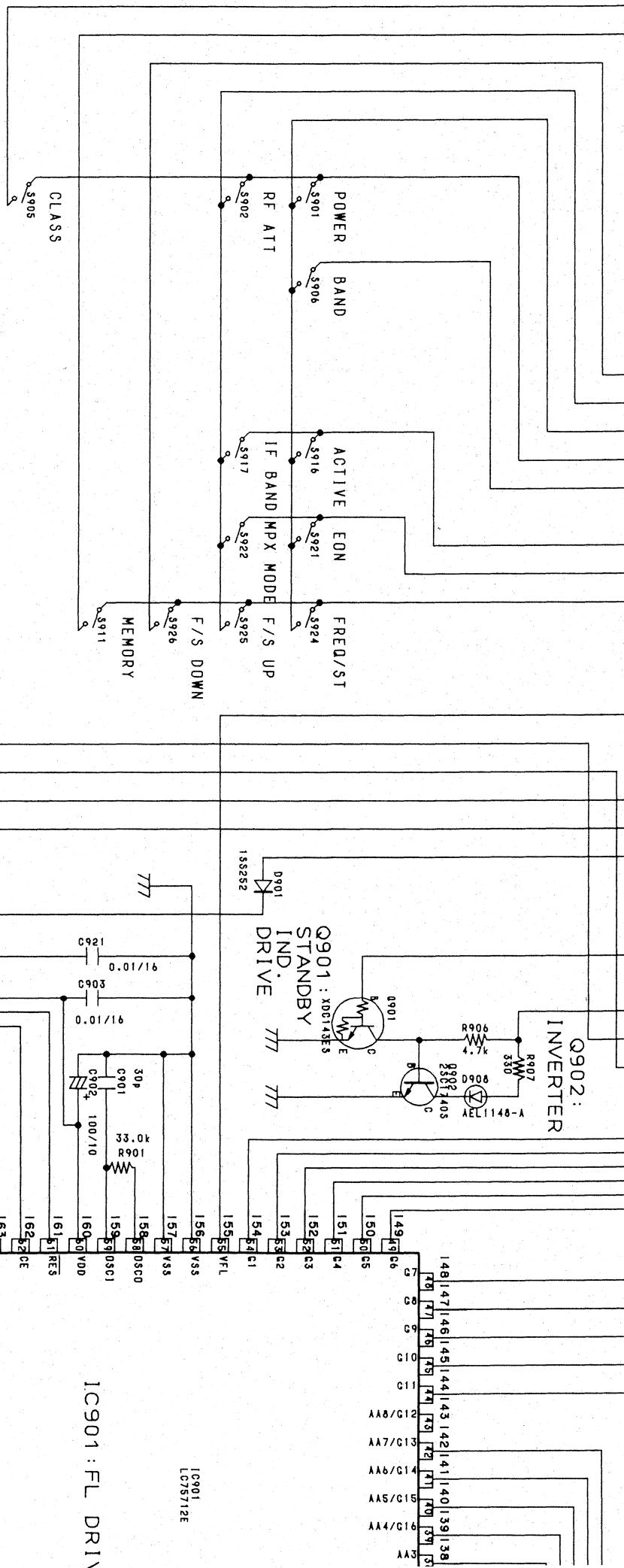
TO TUNER ASSEMBLY (2/2) CN1 (→SCH-4)

CN2 AKP1086	
K14	
K13	
K12	
K11	
K10	
K00	
K01	
K02	
K03	
K04	
K05	
F1L1	
F1L2	
-VDISP	
POWER	
GND	
+5.6V	
FL DATA	
FL CK	
FL CE	
RESET	
21	

C

B

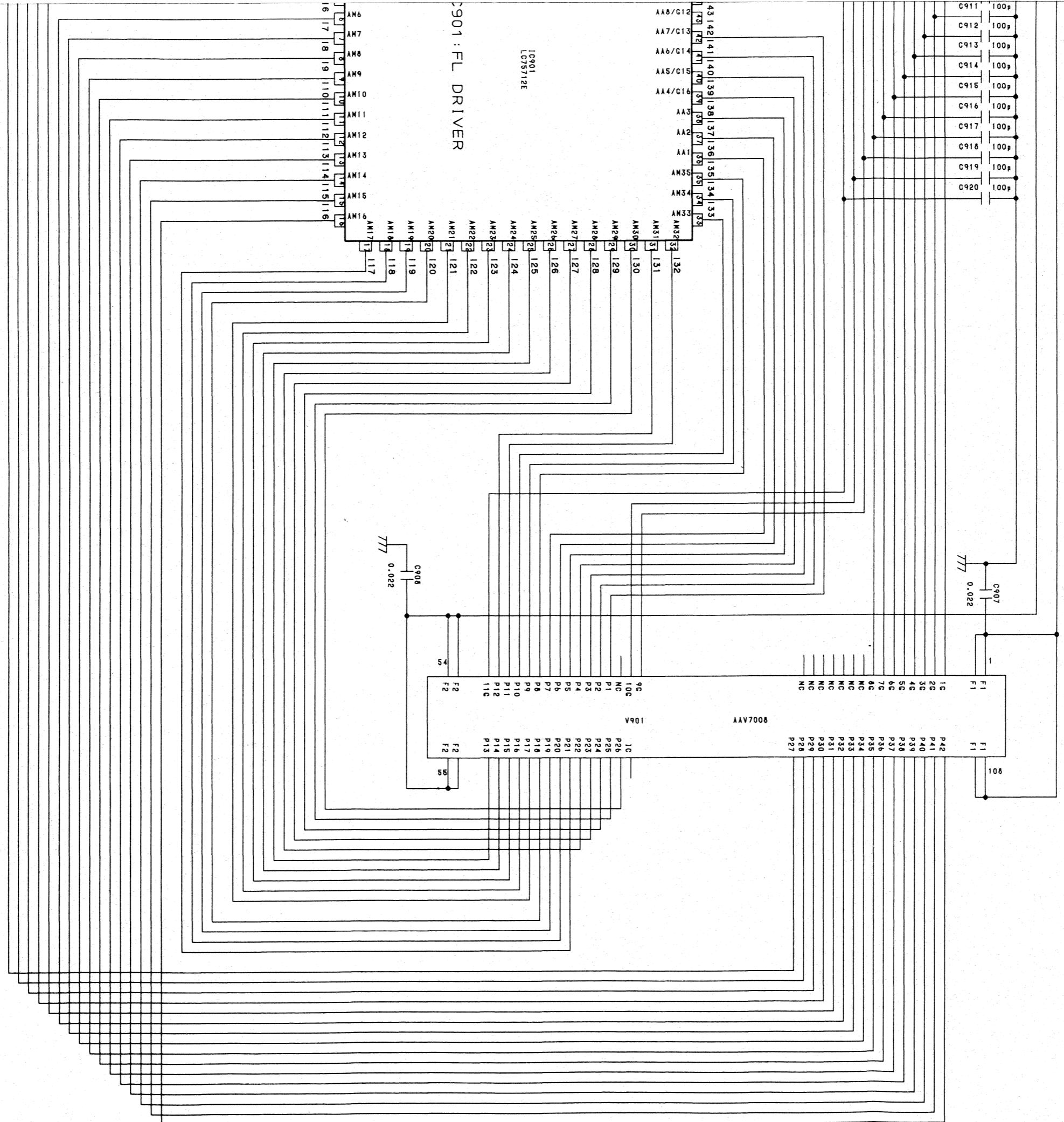
B



DISPLAY ASSY

SCH-2

SCH-2



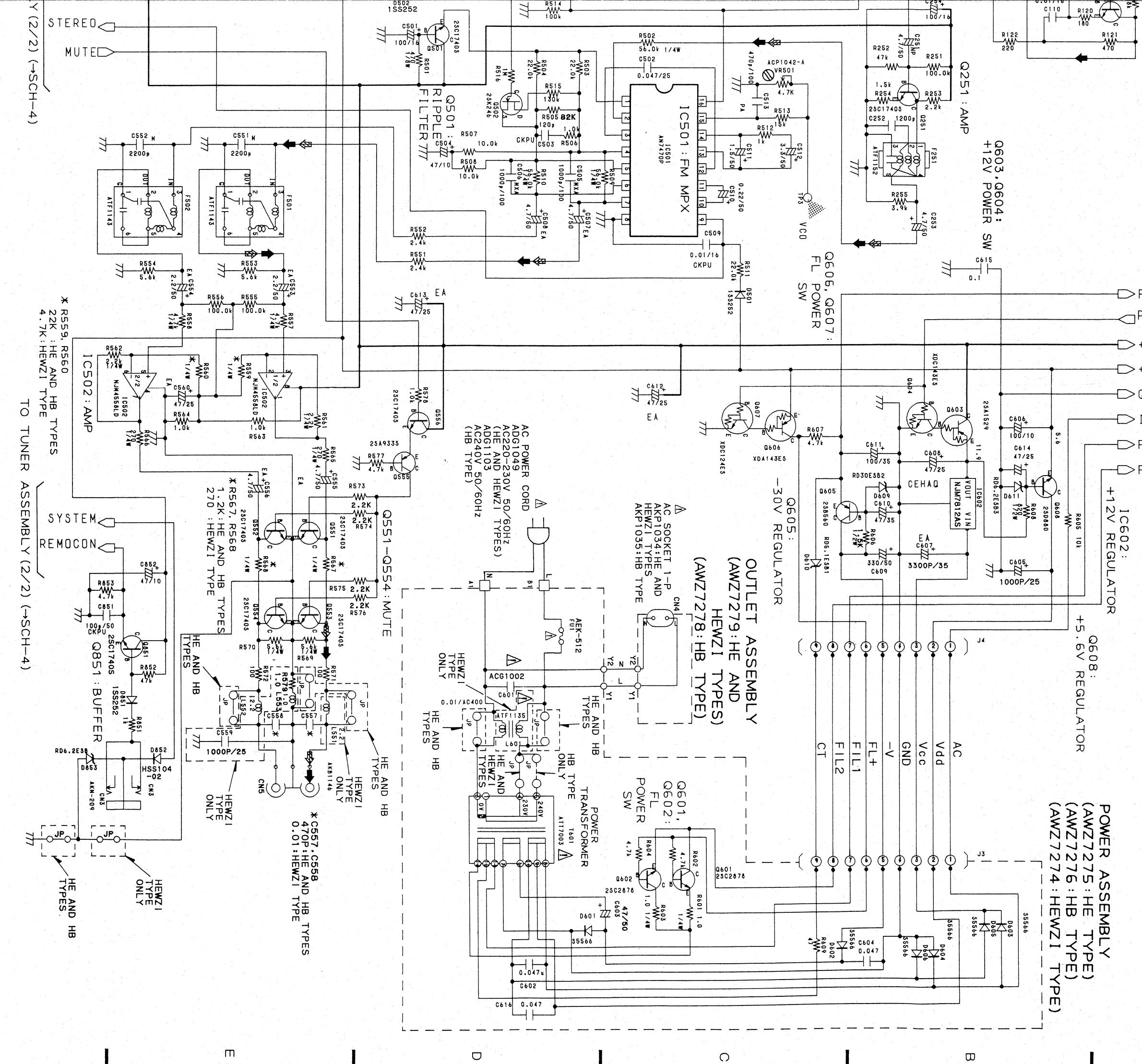


SCH-3

## TO TUNER ASSEMBLY (2/2) (→SCH-4)

FM Signal route (Lch)

AM Signal route (Lch)

POWER ASSEMBLY  
(AWZ7275 : HE TYPE)  
(AWZ7276 : HB TYPE)Q608 :  
+5.6V REGULATORQ609 :  
+12V REGULATORQ610 :  
+12V REGULATORQ611 :  
+12V REGULATORQ612 :  
+12V REGULATORQ613 :  
+12V REGULATORQ614 :  
+12V REGULATORQ615 :  
+12V REGULATORQ616 :  
+12V REGULATORQ617 :  
+12V REGULATORQ618 :  
+12V REGULATORQ619 :  
+12V REGULATORQ620 :  
+12V REGULATORQ621 :  
+12V REGULATORQ622 :  
+12V REGULATORQ623 :  
+12V REGULATORQ624 :  
+12V REGULATORQ625 :  
+12V REGULATORQ626 :  
+12V REGULATORQ627 :  
+12V REGULATORQ628 :  
+12V REGULATORQ629 :  
+12V REGULATORQ630 :  
+12V REGULATORQ631 :  
+12V REGULATORQ632 :  
+12V REGULATORQ633 :  
+12V REGULATORQ634 :  
+12V REGULATORQ635 :  
+12V REGULATORQ636 :  
+12V REGULATORQ637 :  
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+12V REGULATORQ670 :  
+12V REGULATORQ671 :  
+12V REGULATORQ672 :  
+12V REGULATORQ673 :  
+12V REGULATORQ674 :  
+12V REGULATORQ675 :  
+12V REGULATORQ676 :  
+12V REGULATORQ677 :  
+12V REGULATORQ678 :  
+12V REGULATORQ679 :  
+12V REGULATORQ680 :  
+12V REGULATORQ681 :  
+12V REGULATORQ682 :  
+12V REGULATORQ683 :  
+12V REGULATORQ684 :  
+12V REGULATORQ685 :  
+12V REGULATORQ686 :  
+12V REGULATORQ687 :  
+12V REGULATOR

## Line Voltage Selection

Line Voltage Selection: Line Voltage can be changed by the following modification:

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the position of the jumper-lines (A) follows.

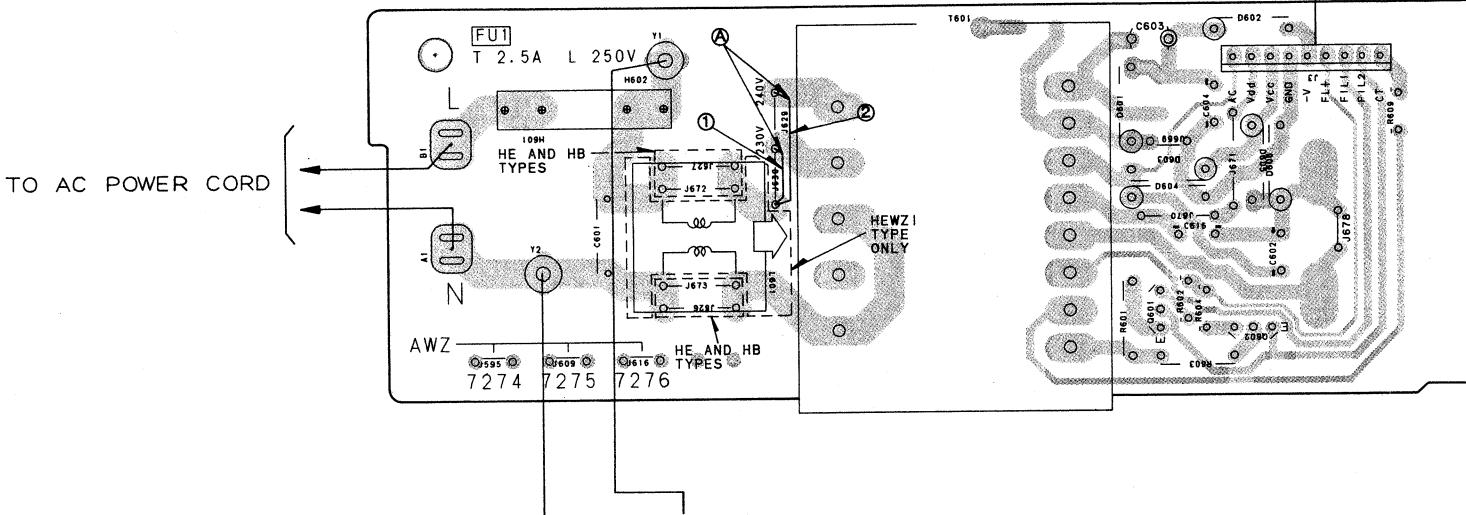
Voltage	jumper—line A position
220V—230V	①
240V	②

**NOTE:** When replacing a PCB which has the primary winding circuit of Power-transformer, be sure to compare its circuit with the diagram in Service Manual. jumper-lines on the PCB may have to be removed. Forgetting this check-up will cause a serious damage.

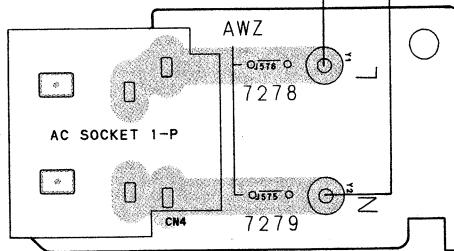
4. Stick a line voltage label on the rear panel.

<u>Part No.</u>	<u>Description</u>
AAX-193	220V label
AAX-192	240V label

## POWER ASSEMBLY



## OUTLET ASSEMBL

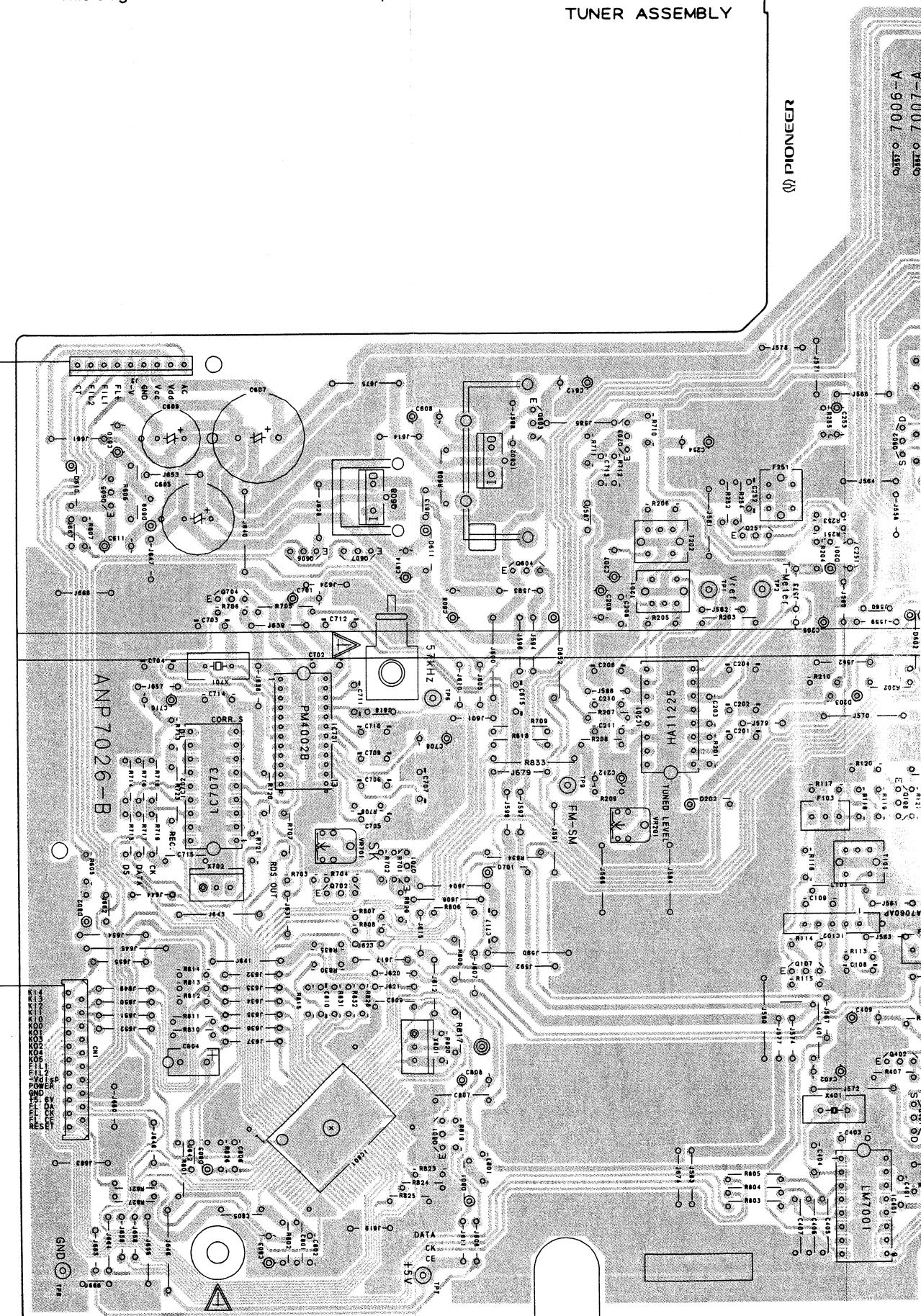


TO DISPLAY ASSEMBLY  
CN2

- This diagram is viewed from the mounted parts side.

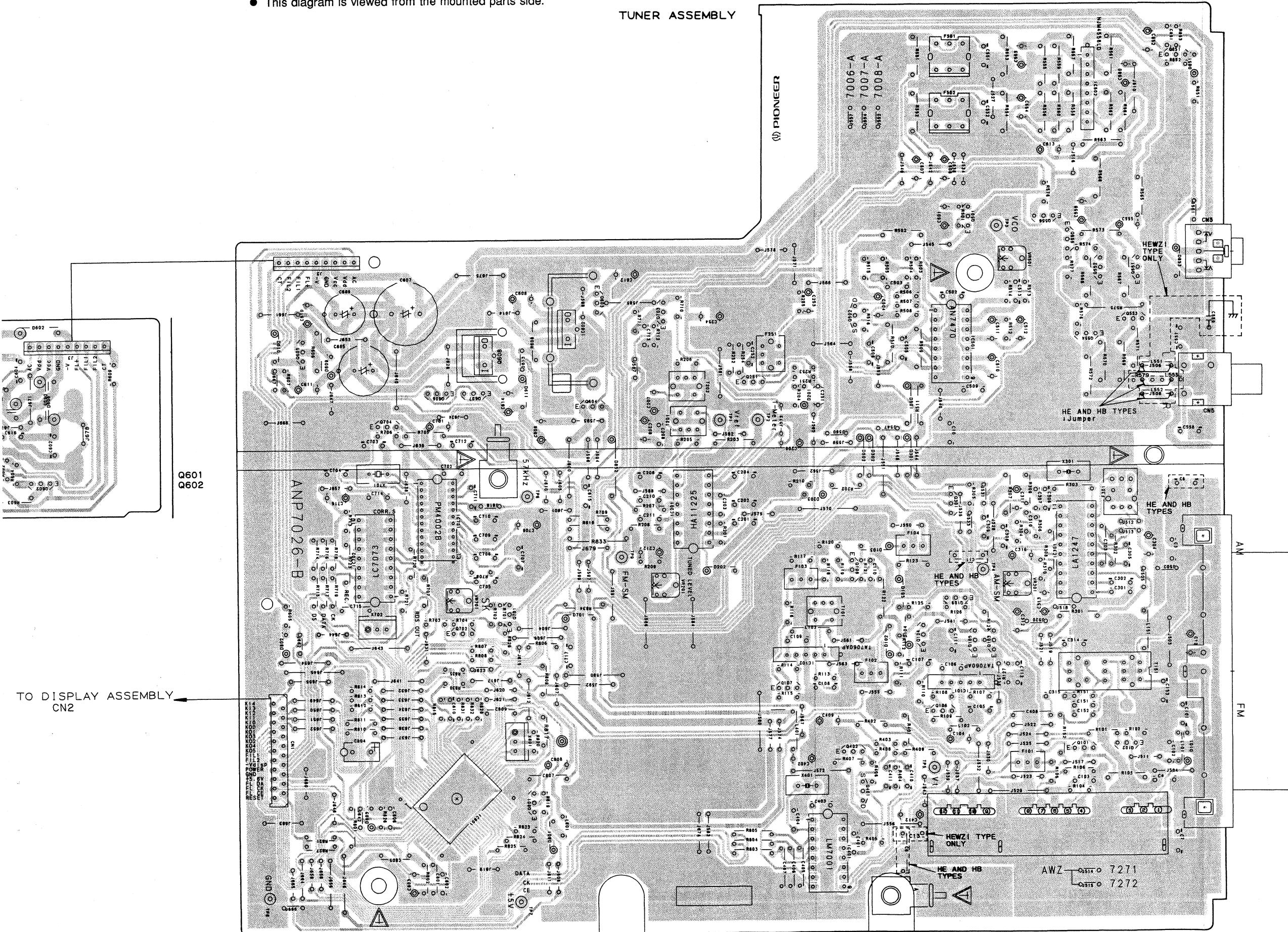
## TUNER ASSEMBLY

דוחות



● This diagram is viewed from the mounted parts side.

## TUNER ASSEMBLY



PCB-2

Q851

IC502

A

Q501  
Q556Q555  
Q552  
Q551Q603  
Q703  
Q502  
IC602  
Q553  
Q554  
IC501  
Q605  
Q608Q251  
Q606  
Q604  
Q704IC701  
IC201  
Q301IC301  
IC702

Q108

Q109  
Q701  
Q702 Q104  
Q105 Q103  
IC102

Q107 IC101

Q106

Q101 Q402  
IC801  
Q401  
Q801

IC401

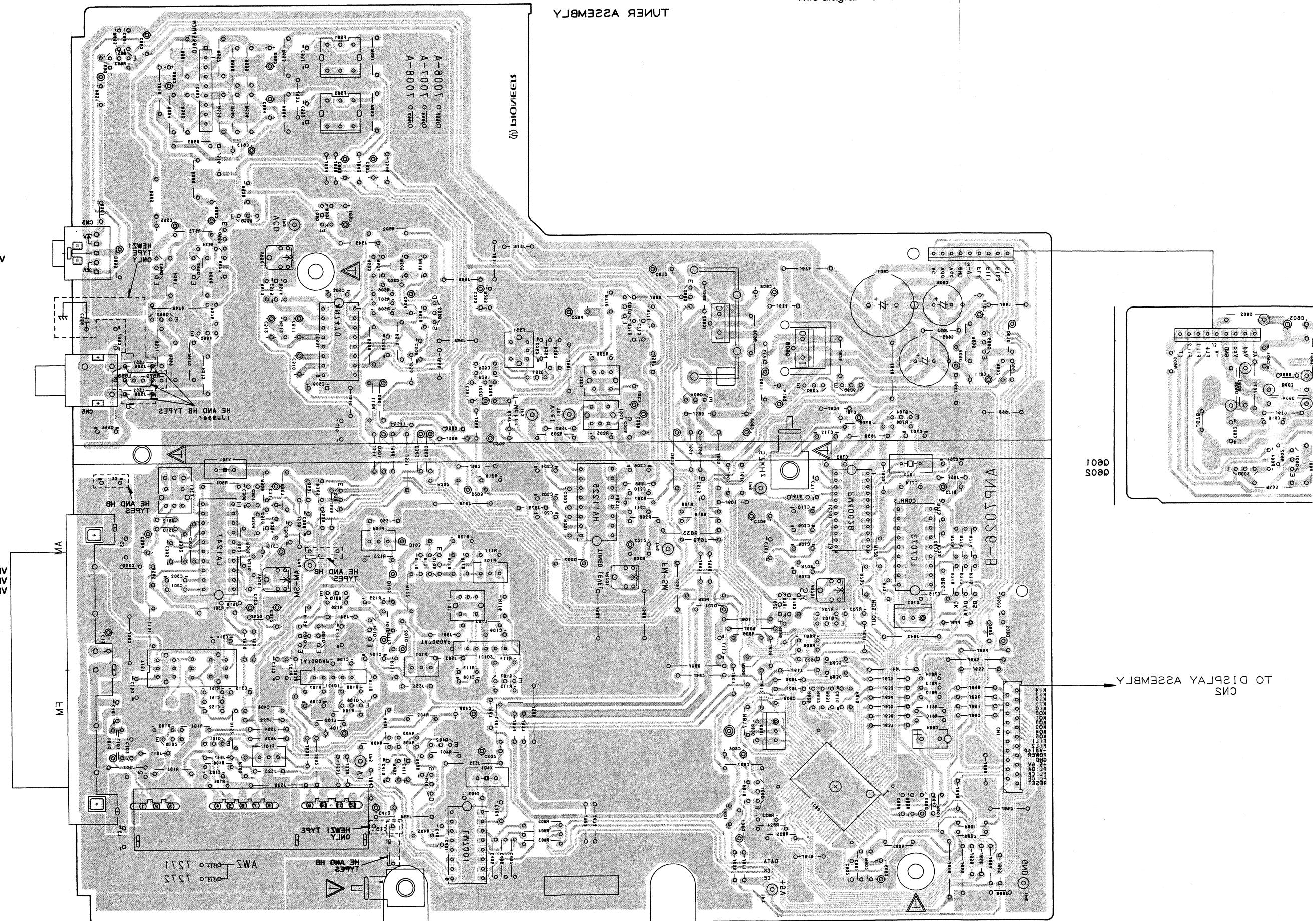
B

C

D

19

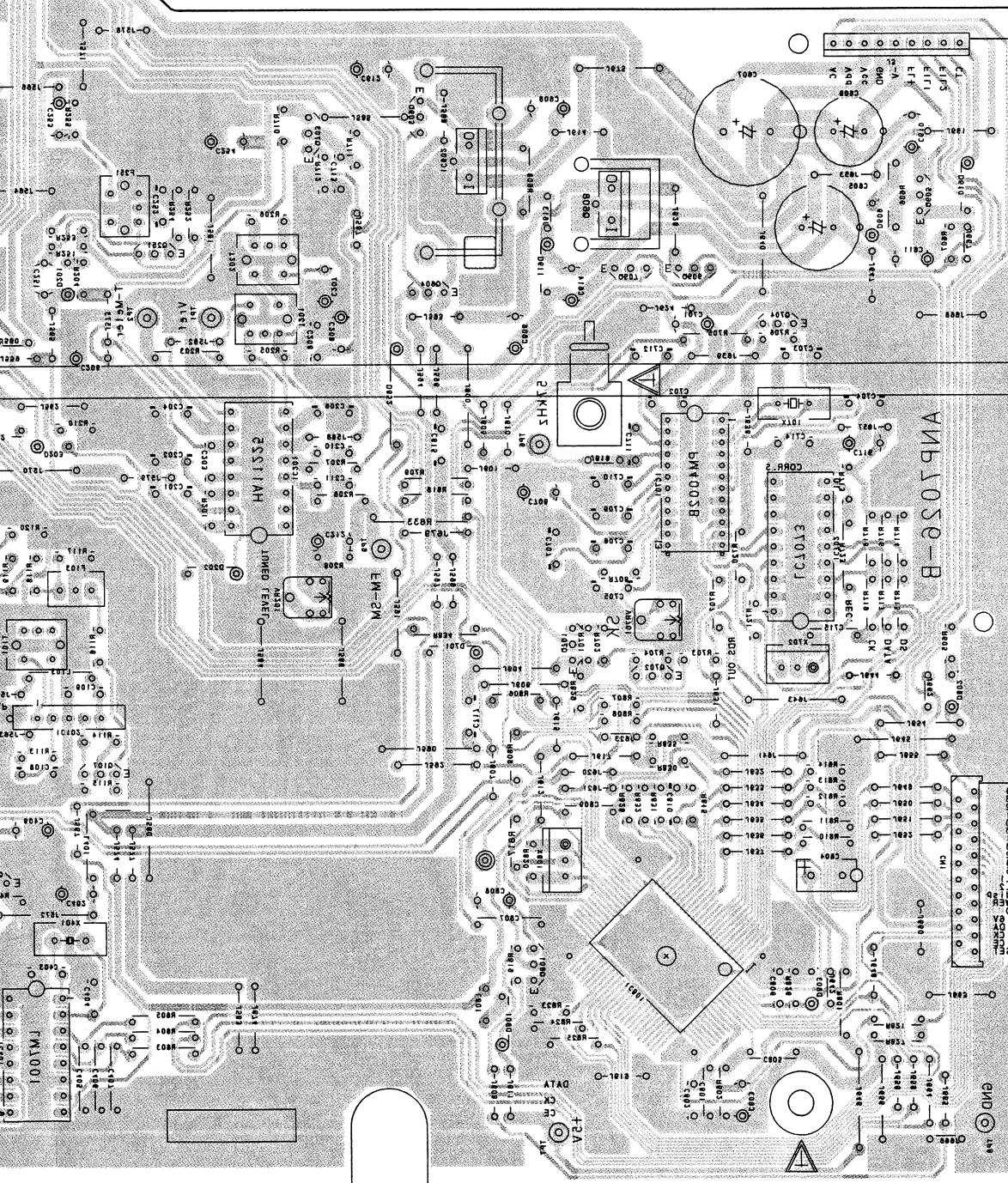
PCB-5



- This diagram is viewed from the foil side.

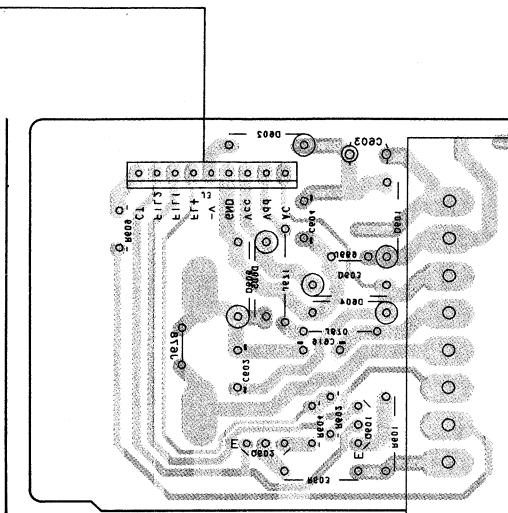
BIONEWS

## TURNER ASSEMBLY



15

CNS DISPLAY ASSEMBLY



8

A

8

C

4

## TUNER ASSY

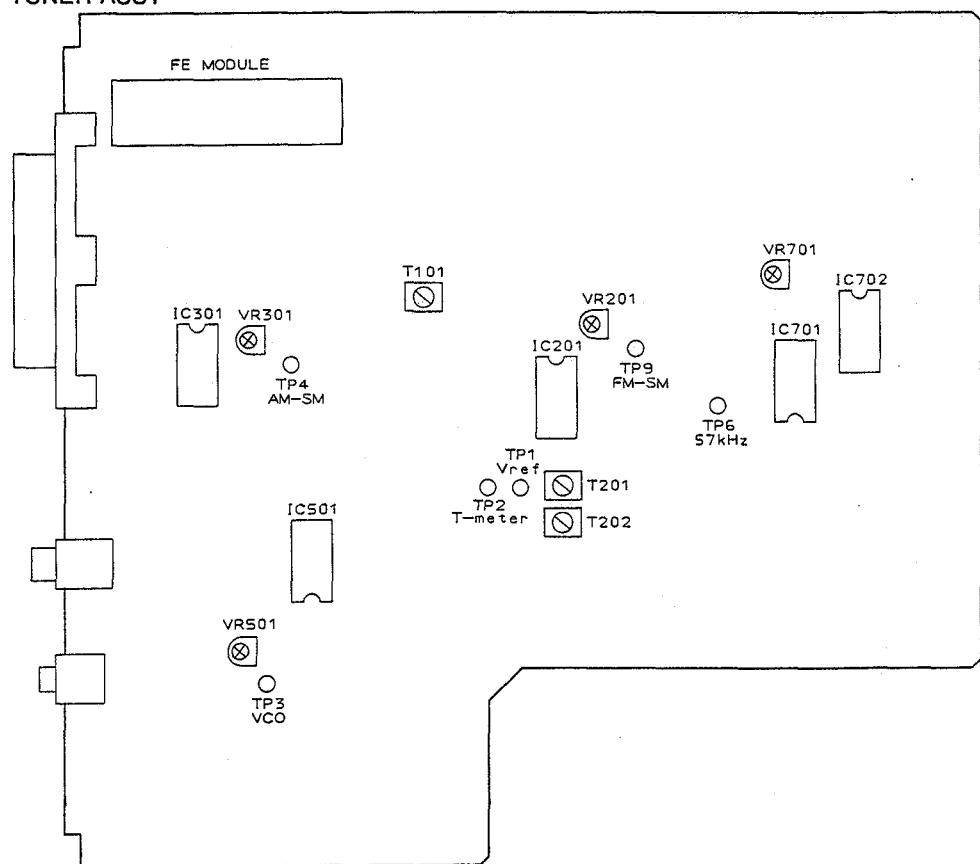


Fig. 1 Adjustment Points

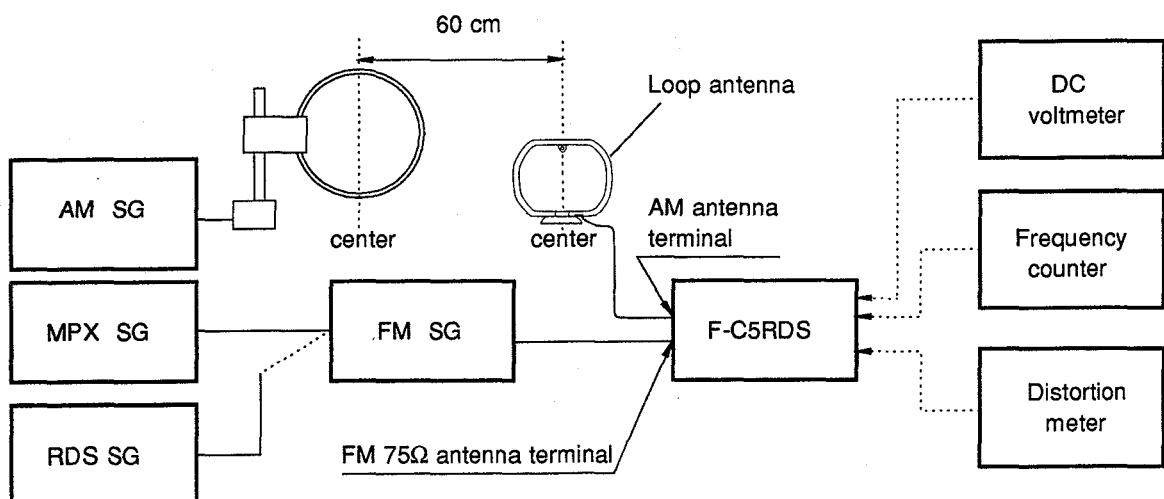


Fig. 2 Connection Diagram

## 7. FOR HB AND HEWZI TYPES

## NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

F-C5RDS/HB, HEWZI and F-C5RDS/HE have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		F-C5RDS/HE	F-C5RDS/HB	F-C5RDS/HEWZI	
$\Delta$	TUNER assembly	AWE7007	AWE7008	AWE7006	
	TUNER assembly	AWZ7272	AWZ7272	AWZ7271	
	POWER assembly	AWZ7275	AWZ7276	AWZ7274	
	OUTLET assembly	AWZ7279	AWZ7278	AWZ7279	
	AC power cord	ADG1049	ADG1103	ADG1049	
	Rear panel	ANC7095	ANC7096	ANC7094	
	Ferrite core	.....	.....	ATX7001	*
	Screw	.....	.....	ABA1047	*
	Operating instructions (English/German/French/Italian/ Swedish/Dutch/Spanish/Portuguese)	ARE7015	.....	.....	
	Operating instructions (English)	.....	ARB7014	.....	
	Operating instructions (German/Italian)	.....	.....	ARC7022	
	FM antenna	ADH1005	ADH1005	ADH1002	
	Plate (GND)	.....	.....	ANK1120	*

\* : Refer to page4.

### TUNER ASSEMBLY

AWZ7271 and AWZ7272 have the same construction except for the following:

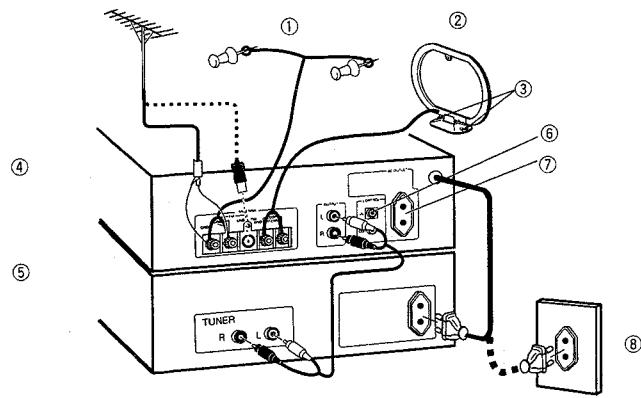
Mark	Symbol & Description	Part No.		Remarks
		AWZ7272	AWZ7271	
	R559,R560	RDR1/4PM223J	RDR1/4PM472J	
	R567,R568	RDR1/4PM122J	RDR1/4PM271J	
	R579	.....	RD1/8PM010J	
	C6	CKPUYB101K50	.....	
	C7	CKDYX223M25	CKDYX103M25	
	C8	CKDYX223M25	.....	
	C10	CKPUYB102K50	CKDYB102K50	
	C11	CKPUYY103M16	.....	
	C12	CKDYB102K50	CKDYB272K50	
	C13	.....	CKPUYB101K50	
	C557,C558	CKDYB471K50	CKDYB103K50	
	C559	.....	CKDYB102K50	
	L551,L552	.....	LAU2R2K	
	L553	.....	LAU010K	
	Antenna terminal 4-P	AKA1010	.....	
	Antenna terminal 2-P	.....	AKA1012	

**POWER ASSEMBLY****AWZ7276, AWZ7274 and AWZ7275 have the same construction except for the following:**

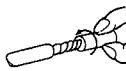
Mark	Symbol & Description	Part No.			Remarks
		AWZ7275	AWZ7276	AWZ7274	
Δ	L601	.....	.....	ATF1135	

**OUTLET ASSEMBLY****AWZ7278 and AWZ7279 have the same construction except for the following:**

Mark	Symbol & Description	Part No.		Remarks
		AWZ7279	AWZ7278	
Δ	AC socket 1-P	AKP1034	AKP1035	

**8. CONNECTIONS****① FM T-type antenna (accessory)**

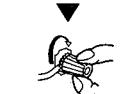
- Use thumb tacks or push pins to fasten antenna wires to a wall.
- Fasten the antenna wires on a wall, not allowing the wires to droop or bunch up.

**② AM loop antenna (accessory)****③ Use these holes if necessary to mount antenna on a post or wall.****④ F-C5RDS****⑤ Stereo amplifier****⑥ Control jack****⑦ AC outlet****1. Connecting the accessory FM T-type antenna and AM loop antenna.**

Twist the vinyl covering on the end of the wire to remove the covering.



Unscrew the connector and twist the antenna wire around the shaft.



Tighten securely.

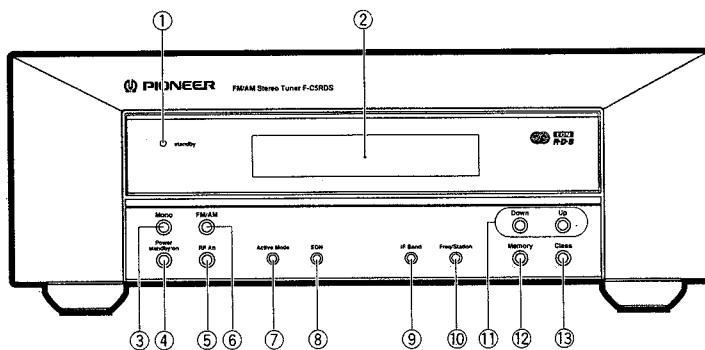
- This antenna provides a simple means of receiving FM broadcasts. For better reception, however, you may wish to use a special outdoor FM antenna.

- Do not mount the AM loop antenna on the metal case of this or other components, or near a CD player, personal computer, or television.

**2. Use the accessory audio cables to connect the color-coded connectors.**

(connect Red to the Right channel and White to the Left channel).

## 9. PANEL FACILITIES



### ① Standby indicator

Goes out when power is turned on; lights when power is set to standby.

### ② Display section

### ③ Mono button

### ④ Power standby/on switch

This is the switch for electric power.

**on:** When set to the on position, power is supplied and the unit becomes operational.

**standby:** When set to the standby position, the main power flow is cut and the unit is no longer fully operational.

A minute flow of power feeds the unit to maintain operation readiness. When the Standby Indicator lights, the unit is in STANDBY.

### ⑤ RF Att button

Press this RF attenuator button if the excessive strength of FM signals results in distortion. The RF ATT indicator will light in the display section.

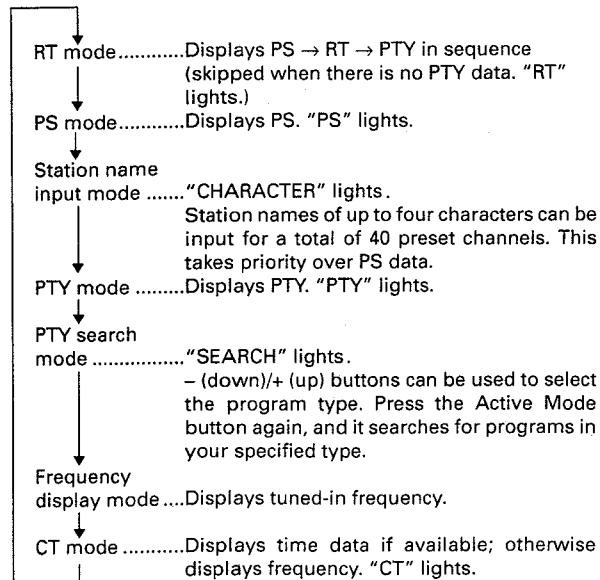
● This function does not operate during AM broadcasts.

### ⑥ FM/AM button

### ⑦ Active Mode button

Each time you press this button, the mode changes as follows:

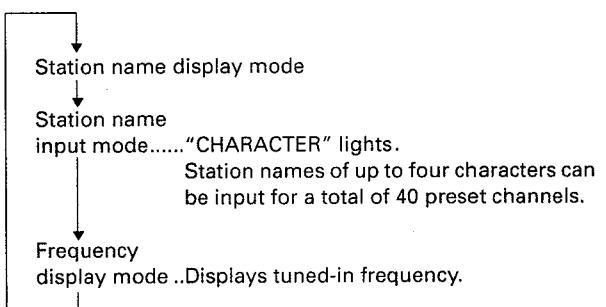
#### FM:



### NOTE:

The station name input mode and PTY search mode are skipped when the EON function is used for interrupt waiting.

#### AM:



### ⑧ EON button

If receiving a station broadcasting EON information, the radio can automatically keep track of broadcast information from other network stations. If you specify traffic information (TA) or program type (PTY) beforehand, the frequency will change automatically when the specified broadcast begins.

The display's EON indicator lights when receiving a station broadcasting EON information.

### ⑨ IF Band button

Each time this button is pressed, the bandwidth of the IF circuit switches between "normal" and "narrow" for the FM band. The NARROW indicator lights up. When not lit, normal filter bandwidth is selected.

Set to NARROW in case of interference from other stations. This button does not affect AM reception.

### NOTE:

This button's status is preset for each station in station memory.

### ⑩ Freq/Station button

### ⑪ Tuning Up+ Down- button

Use to tune broadcast stations.

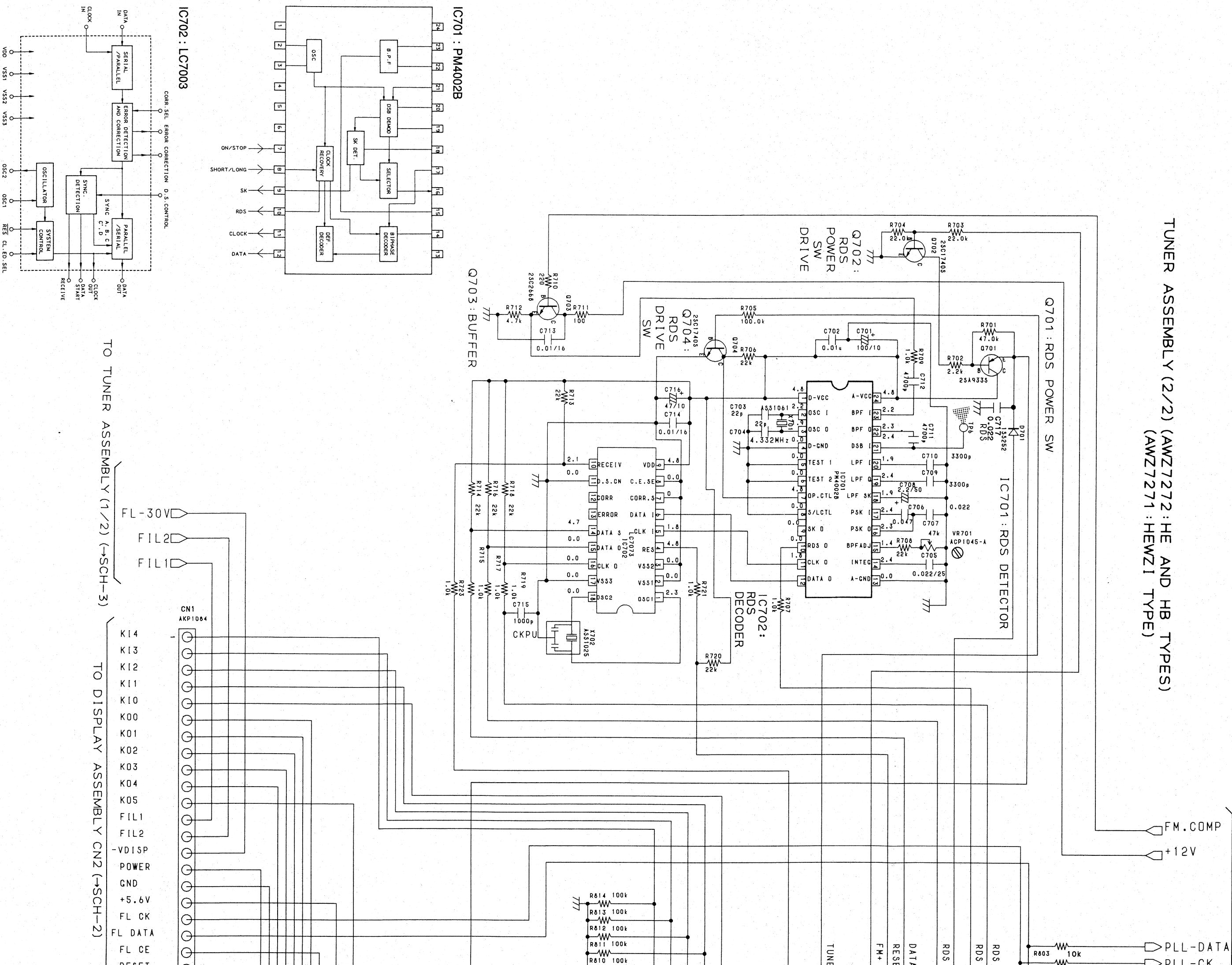
### ⑫ Memory button

### ⑬ Class button

Use to switch between preset memory classes 1 to 4. In each class, 10 stations can be memorized using the "+"/ "-" buttons, enabling a total of 40 stations to be memorized.

## TUNER ASSEMBLY (2/2) (AWZ7272:HE AND HB TYPES) (AWZ7271:HEWZ1 TYPE)

(AWZ1212: HE AND HB  
(AWZ7271: HEWZ1 TYPE)





## 5. PCB PARTS LIST

Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

- *The **Δ** mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by “**●**” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

**Ex.1** *When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47K ohm (tolerance is shown by  $J = 5\%$ , and  $K = 10\%$ ).*

$R_{1,2}$	$W_{1,2}$	$\alpha_{1,2}$	$\beta_{1,2}$	$\gamma_{1,2}$	$\delta_{1,2}$	$R_{N,2H}$	$R_{SIP}$
$0.5\Omega$	$\rightarrow$	$0R5$				$0 R5 K$	
$I\Omega$	$\rightarrow$	$010$					$0 1 0 K$

Mark No.	Description	Parts No.	Mark	Mark No.	Description	Parts No.	Mark
<b>LIST OF ASSEMBLIES</b>							
TUNER ASSEMBLY		D609		RD30ESB2		C111,C112,C113,C201,C202	CKDYX104M25
TUNER ASSEMBLY		D803		RD4.7ESB		C115,C116,C117,C203	CKDYX103M25
POWER ASSEMBLY		D610		RD5.1ESB1		C204,C206,C306,C314,C7	CKDYX223M25
OUTLET ASSEMBLY		D853		RD6.2ESB3		C705,C707,C717,C8	CKDYX231M25
DISPLAY ASSEMBLY		D611				C706	CKDYX473M25
<b>TUNER ASSEMBLY</b>							
SEMICONDUCTORS		AWP7001		ATE-063		C6,C805,C851	CKPUYB101K50
IC501		AN7470P		ATE1008		C10,C3,C301,C307,C4	CKPUYB102K50
IC201		HA11225		ATE1009		C715,C807	CKPUYB103K50
IC301		LA1247		ATF-107		C503	CKPUYB121K50
IC702		LCT073		ATF-119		C203	CKPUYF473Z16
IC401		LM7001J					CKPUYB221K50
COILS AND FILTERS		IC502					CKPUYF474Z16
T101		FA102					CKPUYF475Z16
T201		FA301					CKPUYF476Z16
T202		FA103,FI104					CKPUYF477Z16
F101		FI251					CKPUYF478Z16
F102		FA1043					CKPUYF479Z16
F103		ATF1143					CKPUYF47A01K50
F104		ATF1152					CKPUYF47A02K50
F105		LAU2R2K					CKPUYF47A03K50
F106		LAU470K					CKPUYF47A04K50
CAPACITORS		IC701					CKPUYF47A05K50
C804		Q101,Q603					CKPUYF47A06K50
C704		Q555,Q701					CKPUYF47A07K50
C404		Q605					CKPUYF47A08K50
C405		Q102,Q109,Q251,Q501					CKPUYF47A09K50
C406		Q551-Q554,Q556,Q702,Q704					CKPUYF47A10K50
RESISTORS		IC101,IC102					CKPUYF47A11K50
R606		2SA1529					CKPUYF47A12K50
R607		2SA933S					CKPUYF47A13K50
R608		PM4002B					CKPUYF47A14K50
R307		TA7060AP					CKPUYF47A15K50
CAPACITORS		IC103					CKPUYF47A16K50
C315,C405-C407		Q103,C704					CKPUYF47A17K50
C412		Q151,C403,C404					CKPUYF47A18K50
RESISTORS		Q152					CKPUYF47A19K50
R301		2SC1740S					CKPUYF47A20K50
R571,R572		2SC1740S					CKPUYF47A21K50
RESISTORS		Q153					CKPUYF47A22K50
R302		C205					CKPUYF47A23K50
R303		C312					CKPUYF47A24K50
R304		C606,C701					CKPUYF47A25K50
RESISTORS		Q154					CKPUYF47A26K50
R305		C501					CKPUYF47A27K50
RESISTORS		Q155					CKPUYF47A28K50
R306		2SC1740S					CKPUYF47A29K50
RESISTORS		Q156					CKPUYF47A30K50
R307		2SC1740SLN					CKPUYF47A31K50
RESISTORS		Q157					CKPUYF47A32K50
R308		2SC2668					CKPUYF47A33K50
RESISTORS		Q158					CKPUYF47A34K50
R309		2SD880					CKPUYF47A35K50
RESISTORS		Q159					CKPUYF47A36K50
R310		2SK246					CKPUYF47A37K50
RESISTORS		Q160					CKPUYF47A38K50
R311		C611					CKPUYF47A39K50
RESISTORS		Q161					CKPUYF47A40K50
R312		C605					CKPUYF47A41K50
RESISTORS		Q162					CKPUYF47A42K50
R313		CEAS101M35					CKPUYF47A43K50
RESISTORS		Q163					CKPUYF47A44K50
R314		CEAS102M25					CKPUYF47A45K50
RESISTORS		Q164					CKPUYF47A46K50
R315		CEAS1R5M50					CKPUYF47A47K50
RESISTORS		Q165					CKPUYF47A48K50
R316		C511					CKPUYF47A49K50
RESISTORS		Q166					CKPUYF47A50K50
R317		XDA124ES					CKPUYF47A51K50
RESISTORS		Q167					CKPUYF47A52K50
R318		XDC124ES					CKPUYF47A53K50
RESISTORS		Q168					CKPUYF47A54K50
R319		XDC143ES					CKPUYF47A55K50
RESISTORS		Q169					CKPUYF47A56K50
R320		1SS252					CKPUYF47A57K50
RESISTORS		Q170					CKPUYF47A58K50
R321		C609					CKPUYF47A59K50
RESISTORS		Q171					CKPUYF47A60K50
R322		C512					CKPUYF47A61K50
RESISTORS		Q172					CKPUYF47A62K50
R323		C504,C716,C852					CKPUYF47A63K50
RESISTORS		Q173					CKPUYF47A64K50
R324		1SV156					CKPUYF47A65K50

OTHERS

SCREW	ABA-298
ANTENNA TERMINAL 4-P	AKA1010
PIN JACK(2P)	AKB1146
GN5	

**● Mark** **Mark No.** **Description** **Parts No.** **Mark**

M16 M25 M35 M50 M50	CN3 CN1 X702 X401 X801	JACK(2P) 21P SOCKET CERAMIC RESONATOR CRYSTAL RESONATOR CERAMIC RESONATOR	AKN-209 AKP1084 ASS1025 ASS1042 ASS1055
X701 X301	CRYSTAL RESONATOR CERAMIC RESONATOR	ASS1061 AM RF TUNING BLOCK 4 SERIAL F.E. MODULE ASSY	ATF1027 AXX1043 AXQ1004
M16 M35 M50 M25 M50		Note: 4 serial F.E. module assy has no servise part.	
42450			
022K50 22K50 32K50 71K50		<b>POWER ASSEMBLY</b> <b>SEMICONDUCTORS</b> Q601,Q602 D601-D606	
72K50 03M25 04M25 123M25			
03M25		<b>TRANSFORMERS</b> Δ T601 (14.5VA)	ATT7003
04M25			
123M25			
C23M25 73M25		<b>CAPACITORS</b> Δ (0.01/AC400V) C601 C603 C604 C602,C616	ACG1002 CEA\$470M50 CKDYF473Z50 CQMA473J50
73M25			
1101K50		<b>RESISTORS</b> R601,R603 Other Resistors	RD1/4PM010J
1102K50			RD1/8PM□□□J
1121K50			
473Z16		<b>OUTLET ASSEMBLY</b> Δ CN4 AC SOCKET 1-P	AKP1034
103M16			
103M16			
103M16		<b>DISPLAY ASSEMBLY</b> 12350 102J100	LC75712E 2SC1740S XDC143ES
11100			
1471J			
1821J		<b>SWITCHES AND RELAYS</b> S901,S902,S905,S906,S911 S916,S917,S921,S922 S924-S926	A.SG1034 A.SG1034 A.SG1034
M104J			
M102J M222J M223J M242J		<b>CAPACITORS</b> C901 Q902 D908	CCPUSL300150 CCPUSL470150 CEJA101M10 CEJA220M35 CKDYX223M25
M271J M472J M562J M563J			
RESISTORS	Other Resistors		RD1/8PM□□□J
OTHERS	V901	FL TUBE FL SPASER	AAV7008 AEB7006
	CN1	21P SOCKET	AKP1086

## 6. ADJUSTMENTS

### 6.1 FM TUNER ADJUSTMENTS

- Connect as shown in Fig. 2.

- Set the function to FM.

Step	Adjustment name	FM SG (1 kHz ± 75 kHz dev.) Frequency(MHz)	FL display, Modulation (dB $\mu$ V)	IF BAND etc.	Location	Adjustment
1	IF sensitivity-UP	98	MONO	Low input level	98	T101
2	T meter adjustment	98	MONO	60	98 MHz NARROW	T201
3	MONO distortion	98	MONO	60	98 MHz NARROW	T202
4	Repeat step 2 and 3 until optimum adjustment is obtained.					
5	VCO adjustment	108	OFF	60	108 MHz NARROW	VR501
6	STEREO distortion (NARROW)	89(*2)	L-ONLY	60	89 MHz NARROW	T101
7	Muting level adjustment	98	MONO	15 ± 5dB	98 MHz NORMAL	VR201
8	SK level adjustment	88	EXTERNAL *1 (RDS SG)	60	88 MHz NORMAL (ATT ON)	VR701

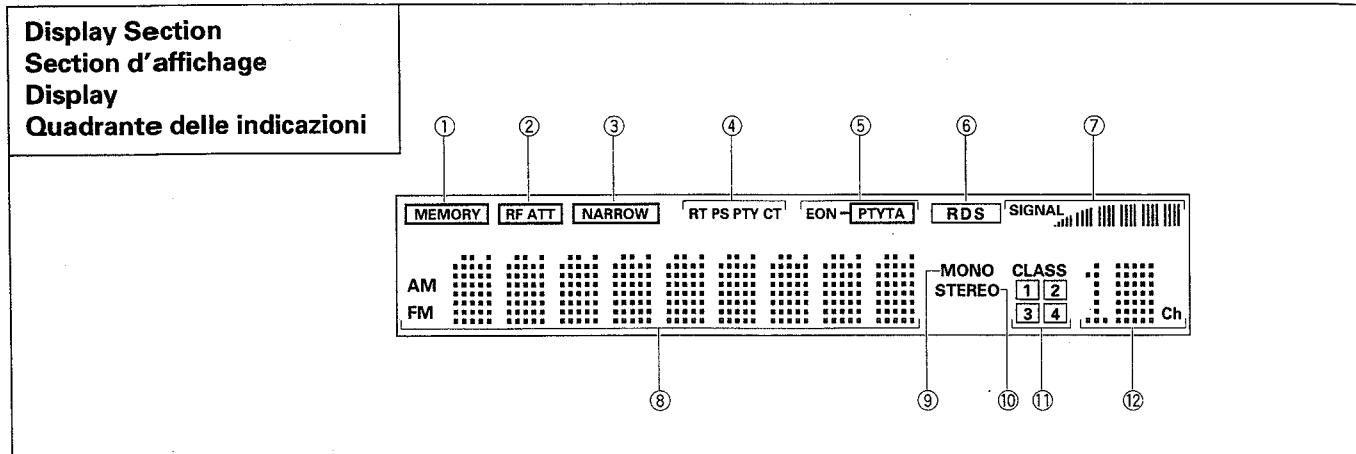
\*1 : RDS SG (AUDIO, PILOT, RDS, BK and DK : OFF, SK : ON)

\*2 : Stereo modulation : Main 1 kHz L+R, ±68.25 kHz.

Pilot 19 kHz, ±6.75 kHz.

Step	Adjustment name	AM SG(400kHz, 30% modulation) Frequency(kHz)	FL Display Level(dB $\mu$ V/m)	Location	Adjustment Specifications
1	S meter adjustment	1008	100	1008 kHz	VR301 Adjust so that the voltage between TP4 and GND becomes 4.5V ± 0.1V.

Step	Adjustment name	AM SG(400kHz, 30% modulation) Frequency(kHz)	FL Display Level(dB $\mu$ V/m)	Location	Adjustment Specifications
1	S meter adjustment	1008	100	1008 kHz	VR301 Adjust so that the voltage between TP4 and GND becomes 4.5V ± 0.1V.



#### ① MEMORY indicator

#### ② RF ATT indicator

Stays lit while RF Att button is on.

#### ③ NARROW indicator

Stays lit while IF Band button is set to NARROW.  
When not lit, stays NORMAL.

#### ④ RT, PS, PTY, CT indicator

One of these lights to indicate the selected display mode (selected by the Active Mode button).  
Time is displayed when the CT data is received. It switches to frequency mode display if not lit.

#### ⑤ EON -PTY TA indicator

When a station broadcasting EON information is received, EON — [ ] lights. After specifying TA or PTY, interrupt waiting begins and the TA or PTY indicator lights. When specified TA or PTY is received, TA or PTY flashes.

#### ⑥ RDS indicator

Lights when an RDS broadcast is received.

#### ⑦ SIGNAL indicator

#### ⑧ Frequency, character, clock time indicator

CT (Clock Time) data, band RDS data and frequency data are displayed.

#### ⑨ MONO indicator

Stays lit while Mono button is set to MONO.

#### ⑩ STEREO indicator

Lights up when a stereo broadcast is received (the indicator does not light when the Mono button is set to MONO).

#### ⑪ CLASS 1, 2, 3, 4 indicator

Shows the class selected by the Class button.  
The current CLASS is displayed.

#### ⑫ Station indicator

When Freq/Station button is pressed, it will show the corresponding channel number.

## 10. SPECIFICATIONS

### FM Tuner Section

Frequency range	87.5 MHz to 108 MHz
Usable Sensitivity (IHF)	12.7 dBf (1.2 $\mu$ V/75 $\Omega$ )
50 dB Quieting Sensitivity	Mono; 18 dBf (2.2 $\mu$ V/75 $\Omega$ ) Stereo; 38.3 dBf (22.6 $\mu$ V/75 $\Omega$ )
Sensitivity (DIN)	Mono; 1.0 $\mu$ V/75 $\Omega$ Stereo; 35 $\mu$ V/75 $\Omega$
Signal-to-Noise Ratio	Mono; 78 dB (at 85 dBf) Stereo; 74 dB (at 85 dBf)
Signal-to-Noise Ratio (DIN)	Mono; 62 dB Stereo; 60 dB
Distortion	0.3 % (1 kHz)
Alternate Channel Selectivity	65 dB (300 kHz)
Stereo Separation	40 dB (1 kHz)
Frequency Response	30 Hz to 15 kHz $\pm$ 1 dB
Image Response Ratio	80 dB
IF Response Ratio	90 dB
Antenna Input	75 $\Omega$ unbalanced
Output	650 mV (100 % MOD.)

### MW (AM) Tuner Section

Frequency range	531 kHz to 1,602 kHz
Sensitivity (IHF, Loop antenna)	350 $\mu$ V/m
Selectivity	30 dB
Signal-to Noise Ratio	50 dB
Antenna	Loop Antenna
Output	150 mV (30 % MOD.)

### Miscellaneous

Power Requirements	AC220—230 Volts $\sim$ , 50/60 Hz
Power Consumption	16 W
Dimensions	260 (W) x 95.5 (H) x 336 (D) mm
Weight (without package)	2.4 kg

### Furnished Parts

FM T-type Antenna	1
AM Loop Antenna	1
Audio connection cable with Pin Plugs	1
Operating Instructions	1
Control cable	1

### NOTE:

Specifications and design subject to possible modification without notice, due to improvements.